# Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

VOLUME IX.] NEW-YORK AUGUST 19, 1854. [NUMBER 49.

THE
SCIENTIFIC AMERICAN,
PUBLISHED WEEKLY,
At 128 Fulton street, N. Y. (Sun Buildings.)
BY MUNN & CO.

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### Profusion of Life in the Ocean.

Not a shell or a stone is brought up, but is thronged with living beings. Every branch of weed gives shelter to multitudes of creatures—some temporary lodgers, some permanent residents. Life is parasitic upon life. The *surpula* builds its stony case on the abode of the shell-fish, and the delicate lace-work of the moss coral overspreads the surpula. Over the stem of the sea-weed creeps the graceful plumes of the zoophyte spring. These, again, are thickly invested by the pretty cells of many smaller species; and they, in turn, minute as they are, often bear in profusion the curious forms of microscopic animalcules. Let us take a stone from the heap that is lying in our boat. It is a perfect museum in itself. It is richly colored in parts by the *nullipore*—one of the lowest forms of vegetable life, which does for the scenery of the ocean what the moss and lichen do for the scenery of the upper world. Here is a circular cluster of cells, "looking like beautiful lacework carved in ivory;" here a little saucer of the purest whiteness, containing within it a number of stony tubes, the habitations of a whole company of tiny polyples. A sponge overgrows one portion of the stone, itself the home of many a living thing; a sea anemone has possession of another. The little encrinite is present, and near it a small star-fish. There are worms, too, in plenty, and more of life and beauty besides than we have space to describe. It is pleasant to think of the amount of happy existence which a single stone may support. The forms to which we have chiefly referred are visible to the unassisted eye; but as Humboldt remarks, "the application of the microscope increases in the most striking manner our impression of the rich luxuriance of animal life in the ocean, and reveals to the astonished senses a consciousness of the universality of being."—[Ex.

Mr. Simon said, at a recent meeting of the Society of Arts, London, that it was a notorious fact, that the great amount of blindness among compositors arose from the want of chimneys to their lamps. Such a statement seemed to him to be totally inconsistent with an age of civilization. That simple remedy should be published far and wide, and when once clearly known compositors would no longer tolerate the old system.

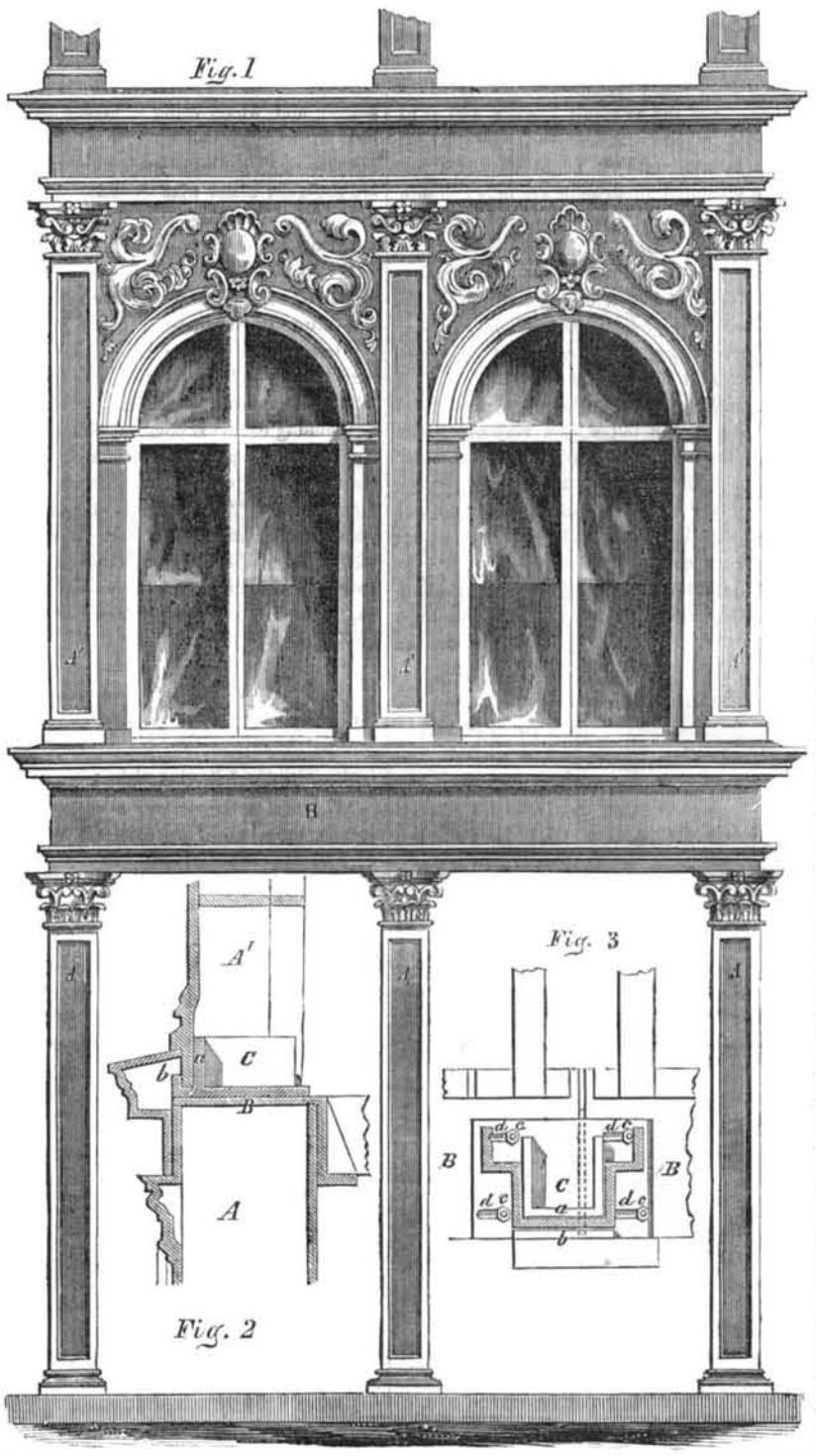
### A Toad Insulated.

One of the operators of the House Telegraph, states that while repairing the telegraph wires at Fairfield a few days since, a live full grown toad was found under the glass insulator, on the top of a pole, which was a chesnut, perfectly smooth, twenty-five feet high, and not near any tree or building.

### Crawford, the American Artist.

Late German papers contain the intelligence that Crawford, our eminent countryman, has been elected, on motion of the King of Bavaria, a member of the Munich Royal Academy of Fine Arts. This is the first American artist, we believe, who has received this distinction.

## IRON HOUSES.




The annexed engraving illustrates an improvement in the construction of iron buildings for which a patent was granted to Charles Mettam, Architect, No. 18 City Hall Place, this city, the 11th of last month. The front of an iron building constructed according to this improvement is here represented—fig. 1 being the second story, as it would appear when finished; fig. 2 is a transverse vertical section of the improvement claimed; and fig. 3 a plan view of the same. Similar letters of reference indicate like parts.

A A A represent the columns of the front of the lower story of a building; and B B the breast summers resting upon the columns in the usual way. C C are the chairs upon which the upper columns, A′ A′ A′, are erected, which consist each of a broad flat plate, as large or larger than the base of the column, with a perpendicular piece, *a*, of such form as to fit to the interior of the column, and another perpendicular piece, *b*, fitting to the front or other part of the exterior of the column. The pieces *a*, and *b*, prevent the column moving upon the chair. The chairs are placed upon any part of the breast summers that may be desirable, and are secured thereto by bolts and nuts, *c c*, for which slots, *d d*, are provided in the chairs, so that the chairs may be adjusted sideways, and so that when a chair rests upon the ends of the two breast summers—as it will when the columns of the upper tier are to be placed over the lowerone—the longitudinal expansion or contraction of the summers may be allowed. Before proceeding to erect the columns, A′ A′ A′, the chairs should severally be adjusted to the required condition, and may be secured before their respective columns are erected.—This method of erecting the columns upon chairs saves much labor, as the chairs may be adjusted exactly in the required positions before the several columns are raised, and the columns may be set up in their place at once without any adjustment. Much labor is thus saved, as the adjustment which is necessary to bring a heavy column to a desired position, is dispensed with and the adjustment of a comparatively light chair only rendered necessary.

An iron building on this plan is now in the course of construction on the corner of Courtland street and Broadway, which deserves the examination of all those interested in such structures. Houses on this principle can be erected with astonishing celerity, as the parts to be hoisted are very few and can be set with ease, dispatch, and precision. This method of uniting the different stories prevents vibrations, from story to story, as is the case with more rigid structures,

Cast iron buildings are becoming more common among us, and if the price of iron was reduced to one half its present cost, there can be no doubt but that for every one now erected there would be five. With improvements in the manufacture of iron, we yet expect to see it greatly reduced in price, and then our people will have cause to rejoice in the substitution of iron for stone and bricks. The streets of New York are oftentimes rendered perfect Babels of confusion with mountains of mortar, marble, stone, and brick; all these would disappear if iron were substituted for them, as a building material.

More information about rights &c., may be obtained by calling upon—or by letter addressed to—the patentee, at his office named above.

### Tempering and Grinding Steel.

MESSRS. EDITORS—In the "Scientific American" of the 15th inst., under the head of "Recent Foreign Inventions," you notice Mr. Chesterman's improvements in tempering and grinding steel, &c. Now so far as the improvement in grinding and polishing steel and other metallic articles are concerned, Wm. Southwell, of Kensington, is justly entitled to receive the honor, he being the first inventor of those improvements, and for which a patent was granted to him on the 4th of May, 1852. A machine constructed by Mr. Southwell for grinding circular saws of the largest size, will be in operation shortly, when the public will have an opportunity of judging of the merits of his invention. I may also state that a model of a machine built by him, for grinding long saws, was examined by one of the first saw manufacturers from Sheffield, during a visit to this city last year. This model, having two grindstones, with suitable means for adjusting the same, ground and polished both sides of the saw at one time. J. E.

Philadelphia, July 24, 1854.

### Spontaneous Combustion—A Warning to Manufacturers.

MESSRS. EDITORS.—I noticed not long since in the "Scientific American" your article on spontaneous combustion in cotton and woolen waste. I had not doubted that such combustion would occur, but was much surprised and alarmed a few days since to find how rapidly it would come on. Our wool cards were cleaned out in the morning and the waste or cleanings swept into a corner instead of being removed as usual. The whole pile of waste could have been easily pressed into a half bushel measure, and did not attract my attention until 2 o'clock in the afternoon, when in searching for fire which we knew existed in the building by the offensive smell, we discovered the waste to be on fire—burning actively after a lapse of about 8 hours. I attribute the rapid combustion to the presence of a handful or two of woolen waste which had been used in wiping down the card frames, where we were using oil of a very inferior kind, on the journals, although purchased at the price and having the appearance of the finest sperm oil. Let all beware of bad oil and oily waste. Yours, JAS. A. HARPER.

Lenoir, N. C., July 12th, 1854.

Many fires are now raging in the sparsely populated sections of New England. The prolonged absence of rain has caused the woods to be unusually dry and inflammable.

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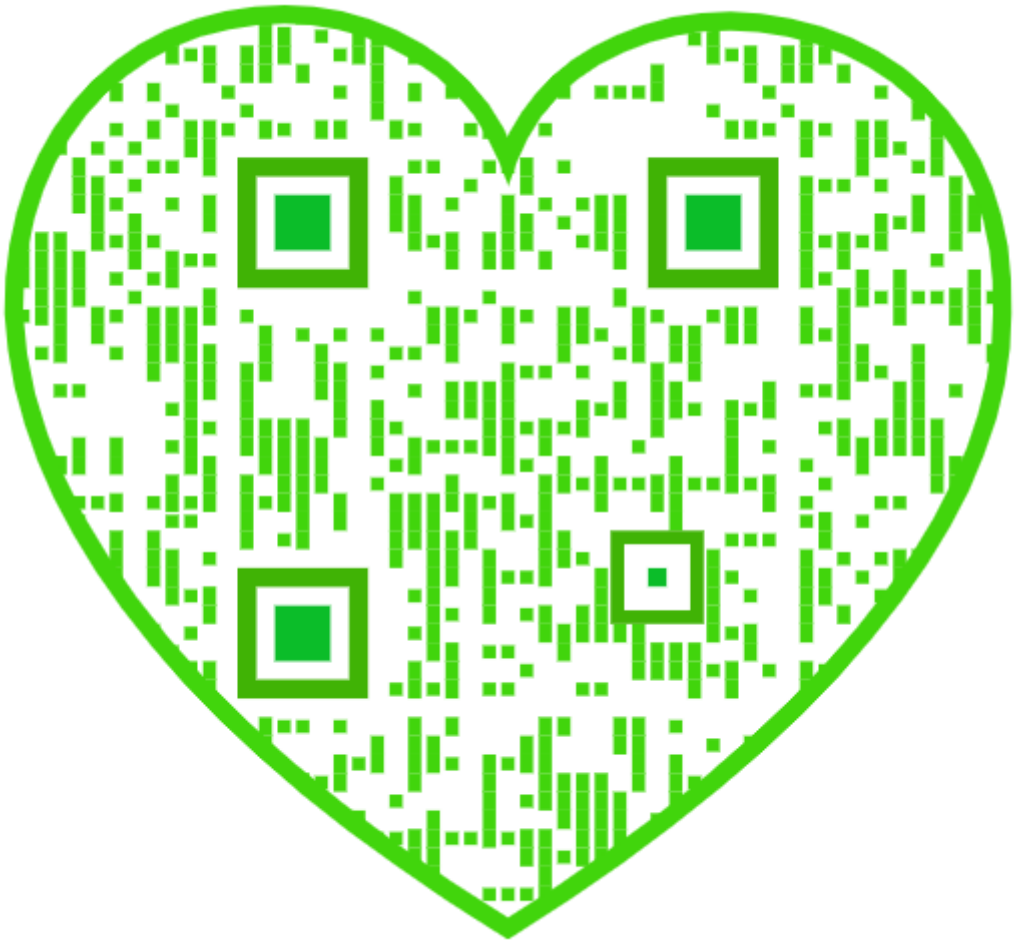

(For the Scientific American.)

**Hardening Tallow.**

The following is the principle of the process of hardening tallow, discovered by Charles Schintz, Consulting Chemist, patented June 13th, 1854, and the claim published on page 282, "Scientific American:"—

Tallow is a mixture of stearine and oleine; both these latter substances are composed of stearic acid and oleic acid with glycerine; these acids are prepared from tallow, by displacing the glycerine either by a stronger base, which is afterwards displaced by a stronger acid (the lime process), or the glycerine is immediately combined to sulphuric acid, and the fatty acids left. In both cases the fatty acids take up water to form with it what are termed hydrates.

Stearic acid is very hard, and only melts at 162° Fah., whereas its compound with glycerine, the stearine melts at 144°. This superior hardness of stearic acid has induced to prepare it from different fats by the above-described processes, and is the produce usually brought before the public as adamantine or stearine candles. In these processes the oleine contained in the fats is also converted into oleic acid, which is separated from the stearic acid, by pressing the raw produce at a certain temperature, and this is easily done, as the melting point of oleic acid is but 39°.

Though the processes of manufacturing tolerably pure stearic acid are very perfect, their operation, however, is very expensive, and what is worse, with the oleic acid goes a very large quantity of stearic acid, through the bags in which the raw acids are pressed. This makes the price of adamantine candles very high.

It was therefore a desideratum to prepare the tallow in such a way that none of the substance is lost, by a cheap operation, without injuring the power of the tallow to produce a clear light and to make it harder.

Some twenty years ago it was discovered that nitrous acid, as well as sulphurous acid, had the property to convert oleine into another fat of the same composition, by their simple contact, which was named Elaidine, and whose melting point is 97°, whereas oleine becomes solid only somewhere about the freezing point.

But sulphurous acid is very slow in its action, and the smallest excess of nitrous acid destroys and colors a part of the fat upon which it acts. These difficulties increased when the attempt was made to produce the action of the above-named acids upon tallow, which contain, in the average, about 25 per cent. of oleine, and though some persons sometimes succeeded to make the tallow very hard, they would not obtain that result every time, and the tallow had under all circumstances a yellow color. The reason of this irregular success was not only the admixture of an excess of nitrous acid, but also due to a partial destruction or oxydation of the glycerine by nitrous acid (formed from the nitrous acid) which makes the tallow worse than it was before.

These difficulties are now obviated by using conjointly nitrite and sulphite of ammonia. The former of these salts has the property to be decomposed by boiling water; however, according to Berzelius, not into nitrous acid and ammonia, but one part is converted into nitrogen, nitrate of ammonia and water, and another part is decomposed by forming oxyd of nitrogen instead of nitrogen, besides the other named compounds, and the nitrogen and oxyd of nitrogen, given off together, finally form nitrous oxyd, as shown in the following formulæ:

$10(N.H.^4O. + N.O.^2) = 4N.H.^3 + 4H.O. + 4N. + 6(N.H.^4O. + N.O.^5)$; and $6(N.H.^4O.N.O.^3) = 4N.H.^3 + 4H.O. + 4N.O.^2 + 2(N.H.^4O. + N.O.^5)$; final results: $16(N.H.^4O. + N.O.^3) = 8N.H.^3 + 8H.O. + 8N.O. + 8(N.H.^4O. + N.O.^5)$

In all probability this decomposition is modified by the presence of fats, and the oxyd of nitrogen acts upon the latter before it combines with the free nitrogen to form nitrous oxyd. Ammonia is going off as long as the operation lasts and prevents, of course, even the existence of any free stronger acids in the mixed ingredients, which would be spoiled by them. However, if nitrite of ammonia is used alone, without the concurrence of sulphurous acid, the tallow takes always a somewhat yellowish tint, which, however, bleaches promptly on exposure to the air.

The tallow becomes fully white, if with the nitrite of ammonia the sulphite is used. This latter salt has, as the nitrite, the property to convert oleine into Elaidine, though it requires more of it and more time, but it has the advantage to leave the tallow fully white. Sulphite of ammonia, boiled with tallow, gives also a part of its ammonia off; its action conjointly with the nitrite of ammonia may be two-fold: first, its own action upon the tallow allows it to take a minimum of the nitrite, and thus avoid an excess of the latter, which has the tendency to give the tallow a yellow color; second, the sulphurous acid prevents the formation of any higher degree of oxydation of the nitrogen, by transforming itself into sulphuric acid, which is immediately saturated by the excess of the ammonia present, and as nitrous and hypo-nitrous acids endanger the color of the tallow, and even might destroy a part of the glycerine, these acids are fully and surely prevented by the use of the sulphite of ammonia.

The conversion of the oleine into Elaidine, being merely an action of contact (kathalysis) the Elaidine weighs neither more nor less than the oleine before contained in the fat, hence this process is attended by no loss.

The conversion of the oleine and consequent hardening of the tallow, is a very cheap process, as the ingredients wanted for 100 lbs. of tallow cost, at the utmost, 37 cents.

The power of the so-treated tallow, to give a clear and intense light, is not inferior, but superior to common tallow, as shown by the following table; the first figures being the consumption per hour; the second, the quantities of light measured by the photometer, and the last the qnotients:—

| | gs. | | |
|---|---|---|---|
| Common tallow candles, 8 to the pound— | 7·10 | 1·000 | 141 |
| Hardened tallow, 8 to lb. | 8·49 | 1·104 | 130 |
| Ditto, small wick, do. | 6·70 | 1·271 | 190 |
| Ditto ditto, 6 to the lb. | 7·02 | 1·404 | 200 |
| Stearic acid candle, ditto | 7·10 | 1·350 | 176 |

From this table, which is the result of carefully made experiments, it appears that under similar circumstances, this hardened tallow gives off sensibly more light than stearic acid, and it indeed should be so, as stearic acid, on being separated from the glycerine, takes up water to form a hydrate, and of course the water does not burn; then the glycerine itself, which remains in the hardened tallow unaltered, contains more hydrogen in proportion than stearic acid, and therefore enhances the intensity of combustion.

It is a very curious fact, that, with regard to wicks and shape, two fully similar candles, the one of hardened the other of common tallow, are consumed by a difference of 16 per cent., and give a difference of 9 per cent. in the quantity of light given off. This depends, of course, on the readiness with which the fat is converted into combustible gases, and it appears that the Elaidine is more readily decomposed than oleine.

It remains to consider the hardness which the tallow acquires by the conversion of the oleine it contains into Elaidine. The melting point of common tallow is about 104° Fah., stearine melts at 144°, and oleine at 32° Fah. Now, if we suppose the tallow to contain 0·65 stearine, this makes $0{\cdot}65 \times 144 = 93{\cdot}60$; 0·35 oleine, $0{\cdot}35 \times 32 = 11{\cdot}20$; this makes the melting point of tallow 104·80°. This oleine being converted into Elaidine, and this latter melting at 97° we have, 0·65 stearine, $0{\cdot}65 \times 144 = 93{\cdot}60$; 0·35 Elaidine $0{\cdot}35 \times 97 = 33{\cdot}95$; the melting point becomes 127·55°, which figure answers fully to the results obtained, as the melting point of this hardened tallow was found to vary between 122 and 135°.

These figures sufficiently show, that this process accomplishes all that can be expected, considering the nature of the material upon which it works, and under the condition of cheapness, and that there should be no loss of matter.

Finally, we raise the question, to what purpose this process of hardening tallow may serve?" The temperature of air being in summer time often above 90°, and the melting point of Elaidine being 97°, this hardened tallow must be still soft, but the average of the temperature of summer in the clime of the country between Baltimore and Boston, being but 71°, it may still be possible to cast this tallow into candles, by doing so in the evening or at night, whereas common tallow requires a temperature not above 60°—a temperature which approaches the average of spring and fall, these being in this clime 48° and 52° Fah. The advantage this hardening of tallow presents to the manufacturer of candles, with regard to the possibility of continuing to work through the summer months, is therefore limited, though it may do a good deal towards this object.

This process more extensively answers another purpose, namely, to make candles that burn down without running, even in the warm season, and which stand a higher degree of heat on being transported through and into hot climes. Candles prepared by that process are generally better than common tallow candles, and will more than justify the slight augmentation of their cost.

Finally, though the tallow hardened by these means is not to be compared with stearic acid, respecting its hardness and the property of the latter to be no more greasy, it however is hard enough to be cast into candles with small self-snuffing wicks, and this convenience of a self-snuffing candle is coupled with the advantage to emit 40 per cent. more light than the common tallow candles, without an increased consumption. This result is due to a more perfect combination of the fat (it requires a wick of 54 of the finest threads as used for sperm candles,) and is to be viewed as a very important improvement in the art of manufacturing tallow candles. *

**A New Tubular Condenser.**

On the 11th of July, 1854, a patent was granted to Franklin G. Smith, of Columbia, Tenn., with the following claim:—

"Whereas in the operation of tubular condensers, especially if the attempt be made to work without the injection of cold water, there is much difficulty found in effecting the instantaneous transmission of the caloric of the steam through the metal forming the tubes of the condenser, on account of the thickness of the metal necessarily used (on the plans heretofore adopted) to secure the requisite strength for resisting the force of the atmospheric pressure; I claim the mode of constructing such tubes by which the two offices (of resisting the atmospheric pressure, and of transmitting the caloric o the steam to the surrounding cold water through the intervening metal of the tubes,) are separated. The pressure-resisting strength being gained from an interior tube of stiff metal having innumerable holes punched through it, and this being surrounded by a water-tight covering of thin sheet copper, or other suitable material, against the inner face of which the steam impinges, by passing through the perforations in the strong inner tube, and is thus brought into the nearest possible contact with the surrounding cold water."

If the reader will consider how the candles are arranged in a box of "long 4's," observing how small a portion of the entire space within is filled with air only, and how neatly the cylinders of spermaceti are fitted among one another, will he have a good idea of the arrangement of the tubes in this condenser. The ends of the tubes furthest from the steam cylinder should be slightly the lowest, to cause the water of condensation to flow in that direction, that it may be received into suitable pipes to be conducted back to the air pump. From the eduction pipe of the steam cylinder, branching tubes conduct the steam to each one of the great number of tubes making up the condenser. The tubes are contained within a large sheet iron tank, through which cold water is to circulate freely. The tubes should not be in actual contact, and the cold water should have a slight disposition to rise, as well as to flow through the length of the condenser.

The construction of these condensing tubes is very simple. Ordinary boiler-plate iron is to be punched with holes placed very near each other, only so much of the metal being left between the holes as to secure the necessary degree of strength and stiffness. The plates are next to be trimmed with shears, and then bent into a cylinder, the edges being brought together accurately. Suitable disks of cast iron are fitted upon the ends; one disk being bored to receive the small pipe for carrying off the water of condensation, and the other having a larger opening for receiving the steam pipe. The coiled boiler-plate needs no riveting; on being covered over with the sheet copper, everything will keep in place, without the possibility of derangement from the working of the engine. Not only is no riveting required at the edges of the perforated boiler-plate, but several lengths may be placed end-to-end, with no other band to keep them in their true places but the external covering of their sheet copper, and a proper attention to the manner of supporting the tubes when they are laid up within the sheet-iron chest or tank.

The patentee proposes the use of a vastly increased vacuum space, into which the steam shall rush at the end of every stroke, even without waiting for any condensation, and also a vastly increased extent of cold-water surface—so great as to do away entirely with the use of injection water. He would have the vacuum space of this tubular condenser to be several times larger than the cubic contents of the steam cylinder, so that a cylinder full of steam might rush into the condenser almost instantaneously, even if it were not to be reduced by condensation in the act of entering the condenser.

The main result the patentee hopes for is, that an accelerated addition will be imparted to the low pressure steam engine, making a large addition to its working power, and that condensation without the use of injection water will invite all our Western river men to adopt the use of the low pressure engine. **

**Another Trip of the Ericsson.**

The Ericsson went down the Bay yesterday morning on a trial trip with one engine only. The other will be ready for use in about a week. We understand (says the "Commercial Advertiser,") that steam has been substituted for hot air, but the steam is generated and applied on a principle much more economic than that now in use."—[N. Y. Tribune, Aug. 9th.

The "New York Daily Times" of the same date had a paragraph in every respect like the above, excepting the admission of the Ericsson (as we recommended long ago) being converted from a hot air into a steamship.

**Thompson's Life Preserving Seat.**

By the last news from Europe, we see that Nathan Thompson, of this city, formerly engineer in the Steamship Pacific, U. S. Mail line, has been exhibiting his life preserving seat before Prince Albert and the Queen.

A salute was fired in the vicinity of the U. S. Armory grounds, Springfield, Saturday evening the 5th inst., by the advocates of Civil Superintendency in the United States armories, in honor of their recent victory.

On Saturday week a blast at the Bridgewater, (Vt.) gold mines laid open a rich deposit of copper, lead, silver, and gold, the lode being four feet six inches in breadth, and of any imaginable length and depth.—"Exchange."

[Vermont must be differently organized (geologically) from all other portions of this earth.

A great Yacht race took place at Newport, R. I., on the 10th inst., for which all the crack American yachts were entered. The prize was a fine silver cup, which was won easily by the celebrated Maria, (conqueror of the America) of Col. Stevens, of this city.

The astronomer Hind, has recently discovered another asteroid.

A large field of cannel coal has been discovered in Hill County, Texas.

About two-thirds of the valuable portion of the engines of the steamship Franklin will be saved.

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### Scientific Memoranda—American.

CAMPHOR VS. PEA BUGS.—A correspondent of the "Horticulturist" says:

"Four years ago, last spring, my seed peas were more than half destroyed by bugs, the largest and best varieties being most injured. The summer following, I had boxes made, one for each variety, with a cover; and when the peas were gathered, I put into each box with two quarts of peas, from six to eight bits of gum camphor the size of a large pea, and mixed them together, and closed the box. The next spring there was not a pea injured. I have pursued the same course every year since, and have not had one pea affected by bugs."

PISTON PACKING AND LIGHTNING.—The following is from the Chicago "Democratic Press" of the 1st ult.:

"An occurrence took place at the New Water-Works during the thunder-shower on Monday evening last, which at the time attracted considerable attention. The water was at the time being raised by the smaller or reserve engine, which is placed in the south wing to be used as occasion may require, the pump attached to this engine, is in the form of a cylinder placed horizontally in line with the steam cylinder of the engine and connected also with the same piston. The pump-valves within this cylinder are constructed in part of a preparation of india-rubber. The attention of the engineer in charge at the time referred to, was arrested by the sudden increase of velocity in the stroke of the engine which it had been previously making at the usual moderate speed. The engine was immediately stopped, then carefully started again, when the same velocity was resumed, as though relieved of the usual resistance. The first engineer being called, and the pump examined, the india-rubber of the valves was found to be completely melted, thus explaining the loss of resistance and increase of velocity. The only question is, what melted the rubber? A charge of electric fluid passing down through the column of water in the tower, and thence through the pump down into the sink or well would have been likely to produce the result."

[We cannot conceive how the lightning could possibly produce such an effect, because, the metal of which the pump is formed would conduct the electricity past the india-rubber packing into the well; something besides electricity melted the india-rubber; the engineer has possibly found out the secret before this.

ICHTHYOLOGICAL.—Viviparous fish, formerly deemed such rare and remarkable natural wonders, are now getting known as abundant in various quarters. The first were discovered on the coast of California, about a year ago.—One species has since been said to have been taken in the Canadian waters, and a United States officer avers that the stingray of the Carolina coast is viviparous. Professor F. S. Holmes substantiates this, and says that the devil fish also bears its young alive.

A NEW MINERAL.—Mr. Henry Wurtz, of Newark, N. J., the State Mineralogist, has discovered in the quarries of Mr. Alyna, near Newark, a substance which on analysis proves to be a new mineral. It was found in thin flakes between the layers of sandstone, and having an extraordinary resemblance in many respects to white paper he has given it the name of "Papyrodyte." It probably exists in small quantities, and will be of no value except as a scientific curiosity, as very few minerals are now discovered. It is flexible and elastic, not acted on by acids, may be heated red hot without change of form, but loses 20 per cent. of water in heating, and then becomes brittle.

GEOLOGICAL—THE FOUNDATION OF FLORIDA.—A correspondent of the "Floridian," speaking of the substratum of that Peninsula, says, "the upper stratum of Florida rests on one vast net-work of irregular arches of stupendous magnitude, through which innumerable rivers, creeks, and mineral waters in silent darkness perpetually flow. Wakulla, Ocilla, Warcissa, Crystal, Homosassa, Chesioutska, Wickswatcha, and Silver Spring, are the principal rivers. The creeks of this denomination are too numerous to mention; most of them afford fine mill sites. They are, too, partly or wholly navigable for the smaller class of steam and sail vessels throughout the entire distances of their subterraneous courses. Those that are not can be made so with comparatively small trouble and little expense. The number of mineral and thermal springs in Florida is more than two thousand. Their principal solid ingredients are the sulphates of lime, magnesia, and soda, oxyd of iron and some iodine. Their volatile ingredients consist of sulphurated hydrogen, carbonic acid, and nitrogen gases.—These gases soon evaporate if the water be exposed in an open vessel to the atmosphere; its taste then becomes insipid, in some instances either magnesian or acrid."

VIRGINIA SILK IN LONDON.—A medal, awarded by the London World's Fair to John W. Gill, of Wheeling, Va., for his domestic silk, has been received by that gentleman. The letter accompanying it says: "The coarser staple products of the United States were expected, but it caused no little surprise to see silk coming from the 'wild West' that rivalled the finest fabrics from the looms of London and Lyons."

CURIOUS EFFECTS OF HAIR ON GRASS.—A few years ago the purchasers of hog-hair at Terre Haute, Ind., carried it out upon the prairie and spread it on the grass to dry. This was in the fall and winter. After being washed with the rains, it was raked up, leaving a portion sticking in the grass. In the spring this was the earliest green spot and continued to be the sweetest, as was proved by the cattle resorting there to feed. By and by one of them died, then another and another, though apparently fat and healthy. Then one was opened to ascertain the cause of death, and afterwards others for curiosity. In the stomachs of those who had fed most upon this hair manured spot, were found two or three dozen hair balls.

### Foreign Scientific Memoranda.

SUBSTITUTE FOR POTATOES.—For the last four years considerable attention has been paid at the Museum of Natural History, in Paris, to the cultivation of a plant coming from China, and known under the name of Discorea Japonica. This plant, says the writer of a paper sent to the Central Agricultural Society, may, by its size, weight, and hardy character, become exceedingly valuable in France, as it will serve as a substitute for the potato. Its tubercles, like those of the Jerusalem artichoke, resist in the open air the severest winter without sustaining any injury. Several specimens of these roots, of very large size, were presented in 1852 to the Society, one of which, of a cylindrical form, was three feet in length; another tubercle, presented in 1853, weighed three pounds, the former having been in the earth twenty months, and the latter sixteen. The flavor of this vegetable is said to be more delicate than that of the potato.

MAN VERSUS HORSE.—The following is from the "Mark Lane Express," (English paper):—"Two weeks ago, a trial of strength came off under the following circumstances: It appears that a wager of a quarter cask of ale had been made between a well-known wheelwright of the neighborhood, and a brewer in Ormskirk, that ten men could not draw a load of stone up Burscough Bridge, which a pair of horses had previously done. The wheelwright backed the men, and the brewer the horses. On the day appointed, the horses brought from the quarry, for the use of the Wigan and Southport Railway, a load of stone of about 50 cwts., weighing, with the cart, upwards of three and a half tuns. This load they took to the top of the bridge and down again. The worthy wheelwright now marshalled his force, consisting of nine stalwart young men belonging to the neighborhood. A cross piece of wood was firmly fixed to the shafts, supported by as many men as could attach themselves to it, the rest either dragging or pushing, and in this manner, cheered on by the acclamation of an immense crowd, they dragged the ponderous load up the bridge with the greatest ease, the knight of the wheel thus winning the wager with one man less than his stipulated number."

### Recent Foreign Inventions.

STEAMING ROVINGS—Samuel Smith, of Bradford, York, England, recently obtained a patent for steaming rovings or yarns of wool wound on a hollow cylinder perforated with holes. The steam is let into the cylinder and made to pass through the rovings; this, it is stated, greatly improves woolen yarns.

PREPARING SKINS FOR TANNING—E. V. F. Lemaire, of Paris, has patented an improvemet in tanning which is thus described:—The skins are first soaked and hung up in a dry chamber heated to about 72° Fah. by steam. After remaining in this chamber for half an hour, they have distributed over them by perforated tubes a very weak alkaline solution of soda; this is repeated twice—half an hour between the operations. Afterwards at the same intervals of time, streams of water are caused to fall upon the skins until they are well cleansed and are considered prepared in a superior manner for the other common processes of tanning.

IMITATION LEATHER—Heiman Kohnstam, of London, has secured a patent for the following mode of making imitation leather:—Into a quantity of thoroughly boiled linseed oil mix a quantity of lampblack sufficient to form a thick paste, taking care to stir the mixture well, so as to thoroughly incorporate the two ingredients. Then spread on the linen, woolen, or cotton cloth, which is to form the body of the imitation leather, a coat of this paste and suffer it to dry, after which it is to be rubbed smooth with pumice stone. Second, third, and fourth coats are then added, each of them containing less lamp black than the first. After the last coat is thoroughly dried and rubbed down, it is to get two coats of varnish made with boiled linseed oil and the sulphate of zinc, after which it may be enamelled and resembles glazed leather.

BOILING OILS IN A VACUUM—John Webster, of London, has taken out a patent for subjecting oils and varnishes to heat in a vacuum instead of in a vessel exposed to the atmosphere. In boiling oils and varnishes over a fire, many accidents have taken place from a flame being brought in contact with the escaping gas from the kettle containing the oils, &c. This method of boiling these substances in a vacuum will obviate this evil.

### Bone Dust.

MESSRS. EDITORS—In your issue of August 5th, you advise Western farmers to use bone dust "home made." If we could only get it we should be glad to use it freely. But the grinding of bones has not even been attempted, to my knowledge, west of New York, and yet tuns upon tuns are lying about the precincts of our cities, or are shipped eastward.

I respectfully doubt the practical correctness of your own and Prof. Johnston's advice, to apply bone dust to land in preference to superphosphate, if the latter is properly made. The super-phosphate yields a ready return—repays the expenditure at once—and this I consider one of the best qualities a manure can possess. You cannot estimate the value—the *endurance*—of these slow-acting manures, and you are apt to trust to their remaining virtues a year too long, and thus lose a crop. The great art in farming is to make quick returns. On the other hand our greatest drawback is, that we are obliged to wait six months to a year for remuneration for labor and manure at best, and it would hardly pay to purchase bone dust at 40 to 50 cents per bushel, even measure, and wait three years for full returns. Your Wall street men would grow nervous under a durance of as many months. It is my intention to test the value of bone dust and super-phosphate, upon my own farm in St. Joseph Co., Mich., next year, and shall be obliged to send to your city for it at the above rates, with the cost of transportation added. If I could get it "home-made," I should save one-third of the expense. CHAS. BETTS.

[We are well aware of the super-phosphate of lime acting more quickly than bone dust, but prospectively like a rotation of crops, so might the bone dust be applied to give a regular return annually. We also believe that if some glauber salts were mixed with bone dust, the effect would be beneficial. To make phosphate of lime soluble in water, it must be converted into a bi-phosphate or super-phosphate. The method of doing this is thus described by Solly, Prof. of Chemistry to the London Horticultural Society:

"Crushed bones, either raw or burnt (the latter preferable) are mixed in a leaden vessel with sulphuric acid, when, after a short time, the acid is found to have completely decomposed the bones and reduced them to the state of a moist solid, which, however may be easily rubbed to powder, and used in any way as a manure, either alone or mixed with dry soil. The effect thus produced by the sulphuric acid is very simple,—burnt bones consist of the phosphate and carbonate of lime, the latter in a far smaller proportion than the former, and when sulphuric acid is poured over burned bones, the carbonate of lime is wholly decomposed, being converted into gypsum. The phosphate of lime is partly decomposed, the sulphuric acid takes from it the greater part of the lime forming gypsum, whilst the rest of the lime, being still combined with the phosphoric acid, constitutes a very sour and easily soluble salt—a bi-phosphate or super-phosphate of lime."

Solly considers it best to use this manure always mixed with that of the barn-yard. Its manufacture is a simple affair. Feeding in crushed bones into the proper vessel with care, and allowing free action of the acid for a day or two, appear to be all that is required to produce this manure by any farmer.

### The Wheat Fly.

We perceive by a number of our exchanges, that the ravages of the wheat fly have been very destructive this season, in some of the western parts of New York. This insect, it seems, has been moving westward from the Atlantic sea-board about 60 miles every year, for a number of years. Various means have been proposed for its destruction, but none have proved effectual. The burning of fires around the fields to smoke them off; the sowing of dry lime dust and sifted wood ashes, among the grain, have been tried with some advantage, but have not proved conclusive.—It is stated that Mr. Mechi, the famous English farmer, manures all his land with liquid fertilizers scattered over his fields and crops in showers by force pumps. If all our wheat raising farmers possessed strong, simple and portable force pumps, workable by their teams, they could shower solutions of various kinds over their wheat fields at such periods as would, we think, entirely destroy this insect in its larvæ state. A weak solution of potash or a lye of potash and lime might effect this object.—Experiment would soon discover the proper solution; we only recommend the plan. It may appear troublesome and expensive for large wheat fields, but the way to estimate the value of anything, is to compare the profits of its use with the loss sustained by not using it.

### Great Engineering Invention.

William H. Brown, of Erie. Pa., went to Europe in the Pacific, which left here on the 5th inst., taking with him a model of an invention in engineering, (for which he has taken measures to secure a patent) which must strike the civil engineers of Europe—as it has many of our ablest—as one of the greatest improvements ever brought before the public, for the transporting of blocks of stone to piers in the course of erection in rivers; also the transporting of cannons, and the baggage of armies over rivers. By this invention, the whole of the artillery of a large army could be carried across a broad river in a few hours, without a single boat being required. It is the very thing wanted on the Danube.

A man in Wheeling, Va., lately rendered himself a cripple for life, by a cold bath, while sweating. Paralysis immediately shrivelled his left side, from shoulder to foot, a deadness creeping over it which no medical aid can probably remove.

The crops in various parts of our country are suffering from a severe drought; this is especially the case around New York.

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# New Inventions.

### Improvements in Switches for Railroads.

We cannot conceive how the above name ever came to be employed for this railroad device for shifting the movable part of a track, but as it is in use, we suppose we must employ it, although track-shifter, or rail-key would be more appropriate. Of the many improvements made in such devices, David Demarest, of this city, who is well known as an inventor, has applied for a patent for a very simple method for keeping the switches of railroad tracks at the bottom of the grooves, and in contact with either of the sides of the groove in the rail; also for preventing the loose forward end of a switch from rising above the rear end, and thus save it from being forced to the one side or broken, when the wheels of a cart or other vehicle comes in contact with it. A shoulder is made in the groove of the stationary rail, where the switch rail matches on it, and this prevents it from rising, and there is also a bolt for holding it down, and these are applied in such a manner, that the wheel of no vehicle can throw out the switch, if it gets between the rails. Much trouble has been experienced with city railroad switches, from the great number of vehicles running on the tracks and the wheels running between the rails at the switches. It is believed that this simple improvement will afford an effectual remedy for these evils.

### Cleaning Boiler Flues.

The cleaning out of boiler flues when they get foul, is both a troublesome and a disagreeable business. Any good improvement for accomplishing this work without going into the flues in the usual way, we consider to be both a humane and an economical invention. John Leinweber, of Covington, Ky., has taken measures to secure a patent for an improvement which promises to be the very thing desired. It consists in placing within each and any flue of a boiler, a perforated pipe, in which steam can be admitted when desired from the boiler, and from which it escapes in jets which strike the interior surface of the flue and loosens the soot, &c. By giving the perforations in the pipe a slanting direction, the jets of steam will not only loosen the soot, &c., in the flues, but will also drive it out of the flues.

### Governor for Steam Engines.

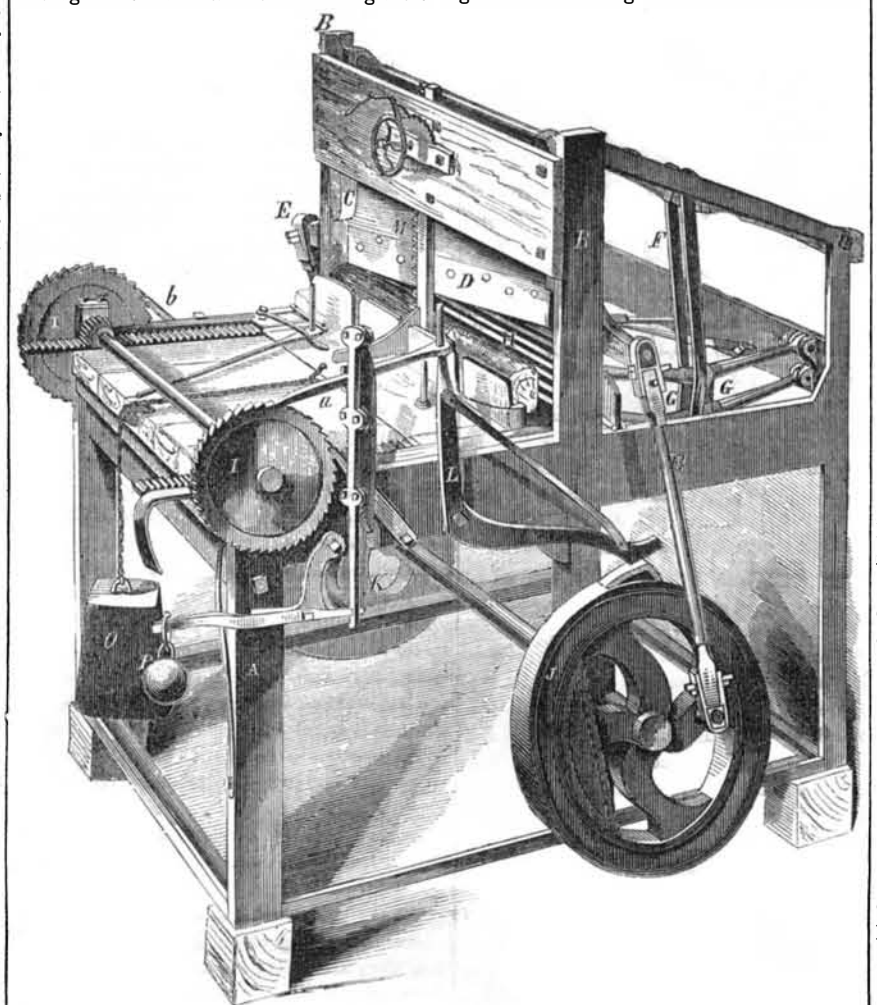
A patent has recently been applied for by Elmer C. Ford, of Bridgeport, Ct., for an improvement in governors for steam engines. This governor, like the common one, depends for its action upon two forces, namely: centrifugal and gravity—each tending to counteract the other. By the manner of hanging the balls, these forces in the common governor are prevented from acting in directions natural to them—the natural direction of the force of gravity being in a vertical line, while the centrifugal force is at right angles to the axis, the balls being compelled to move in a circle. This it is asserted, causes irregularity in the action of the governor. The object of this improvement in the governor is to obviate such irregularity in the action of these forces, and to this end Mr. Ford employs two balls or weights which are fitted to run freely in horizontal ways, rigidly attached to a revolving vertical spindle, and which supports an angular frame, the gravity of which tends to force the balls towards the spindle. The centrifugal force of the balls acts horizontally in opposition to the gravity of the frame, which acts vertically. As the balls support the frame, and as one or other of the forces predominates, the frame rises or falls and gives the necessary action to the throttle valve, which regulates the quantity of steam to be used.

### Iron Wheel Fellies.

Frederick Bowen and Isaac Pedrick, of Bridgetown, N. J., have taken measures to secure a patent for constructing fellies either of wrought or malleable iron, made hollow and of a gothic arch shape, which thus combines great strength of form with lightness.

## LATH CUTTING MACHINE.

This engraving is a perspective view of an improved lath cutting machine, for which a patent was granted on the first of last Feb. to Charles F. Packard, of Greenwich, Fairfield Co., Ct. A series of horizontal cutters are employed in conjunction with a vertical slitting knife, by which the laths are cut out of the solid log in slices, as it were, with great rapidity. A is the lower part and B the upper part of the frame. D is the clearing cutter, and H is a log in the machine. Behind this log there is shown a series of horizontal knives, which are actuated by the connected rod E, (on wheel J) which actuates toggle levers, G G, moving them upwards and downwards in the guide, F, and which give a horizontal motion to the slitting knives, which score into the face of log H. Whenever they have done this and are drawn back, down comes the blade, D, and cuts out a slice of slats from the log. The knife, D, is secured to the stock, M, which has a reciprocating motion. The log is fed forward on its bed

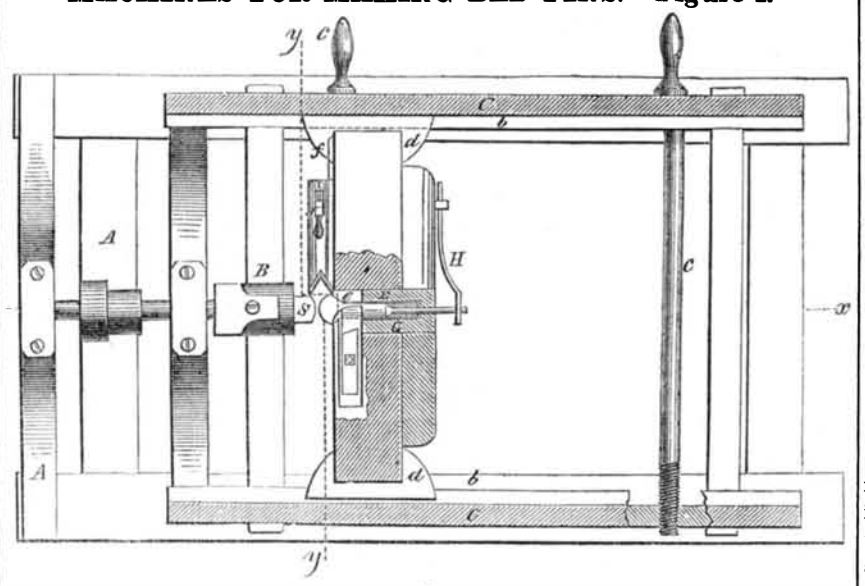



by the spar wheels, I I, the ratches, *a b*, of which are operated by a cam on the side wheels, J, which strikes the bell cranks, L (one on each side) once for every cut, by the revolution of J, and shifts the ratches one notch. This allows the pinions on the shaft of the wheels, I I, to move the racks of the log bed one notch forward for every cut of laths taken off the log, H.—The weight, P, on the lever of the ratchet, *a*, (one for each side) keeps the ratchet firm in the tooth of the wheel, except when it is shifted every stroke by the rotary cam on the side of wheel J. When the log is all cut up into laths by lifting up the weight, P, and ungearing the feed ratchets, *a b*, the weight, O, on the feed bed will run it back to receive another log. The log is secured in its place by a dog or clamp, which has a rack on it, and which is operated by a toothed wheel on the top cross beam of the frame, B.

By this description, the operations of this machine will be understood by all. It is simple in its arrangements and operates with great satisfaction to the patentee. A series of saws moving horizontally across the face of the log, may be substituted for the horizontal slitting knives.

More information may be obtained by letter addressed to Mr. Packard, at Mianas P. O., Conn.

## MACHINES FOR MAKING BED PINS.---Figure 1.

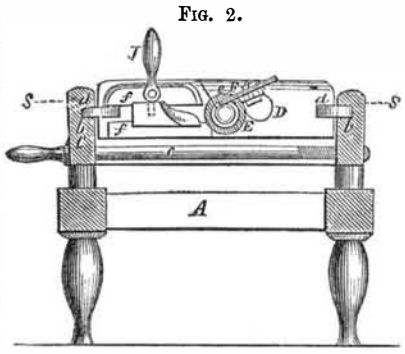



On the 28th of last February, a patent was granted to Wm. McBride, of Bristolville, Ohio, for improvements in machines for making bed-pins, said improvements being represented by the annexed engravings, figure 1 being a partial plan and horizontal section through *s s*.

Figure 2 is a vertical transverse section of the machine through the line *y y*, in fig. 2. The same letters of refereuce are placed in both figures. The improvement consists of two parts; first: in attaching to a common turning lathe a cutter stock or sliding block, and providing said stock with two peculiarly shaped cutters, one stationary, and the other movable, the stationary cutter being of such shape that it forms the tapering part of the pin, while the movable cutter is of a proper shape and construction to form a round head on the pin and simultaneously therewith cut off the pin from the block ready for being discharged.—Second, in making all the pins of a set of an uniform length by employing a spring plug or gauge, and by the same means effecting their discharge after they have been turned, headed, and cut off.

A represents an ordinary turning lathe having the improvement attached to it; the lathe is shown as it appears when in operation. A block, S, from which pins are to be turned being shown secured in the chuck, B, of the same—a pin is also represented as completed and cut off and ready for discharge. C represents a frame carrying the improvement; this frame is secured by set screws to the top of the lathe. It has two ways, *b b*, for the cutter stock, D, to slide in; these ways can be moved nearer together or further apart by the set screws, *c c*, and thereby the sliding block or cutter stock can be kept in place while the heading and cutting off the pin is being performed. D is the cutter stock; it has tongues, *d d*, which fit and move in the ways, *b b*, as the pin is turned. This stock has a circular horizontal recess cut in its center in which a barrel, E, fits snugly, this barrel is just large enough for the pin to move freely in, and is made of a gradually tapering shape to correspond to the desired shape of the pin. This barrel has an open space, *e*, cut in its top for the cutting edge of the inclined cutter, F, to pass through and turn the pin to the right size as it passes into the circular recess or barrel, E; this barrel is open at its front and wide end, and closed at its back or taper end; G is a spring plug which moves and plays freely in the barrel, E, this plug is forced against the back end of the barrel by means of the pin as it is gradually turned; this plug serving to gauge the length of all the pins and make them of an uniform length. The spring, H, of the plug yields as the pin is forced into the barrel and consequently is expanded; by thus expanding the spring the discharge of the pin after being finished can be easily effected, for by sliding the block, D, from the chuck, space will be made and the pin allowed to escape, it

Fig. 2.




being forced out of the barrel by the contraction of the spring, this contraction taking place as soon space is formed between the chuck and the stock.

There is a V-shaped or a similar cutter; it is connected loosely to the cutter stock, and is made to slide in dovetail, or otherwise, *f f*, when the lever, J, is operated. This V-shaped cutter is moved up to the block by means of the lever, J, after the taper portion of the pin is turned and cuts the round head on the pin, and simultaneously therewith cuts off the pin from the unturned block. After the V cutter has performed its duty it is moved back, at the same time the screws, *c c*, are slackened and the cutter stock which was secured fast for the heading operation, loosened and moved back a short distance simultaneously with the backward movement of the cutter stock. After the pin is discharged the cutter stock is again moved up to the block, until the cutter, F, turns off another pin, &c., and so the operation is continued, and bed pins produced very rapidly.

Any shaped pin or knob may be produced by this machine by changing the form of the cutters.

More information may be obtained by letter addressed to the patentee.

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# Scientific American.

NEW YORK, AUGUST 19, 1854.


### The Colt Patent in Congress.

It is well known to our readers that application was made to have the patent of Col. Colt, for revolving fire arms, extended by special act of Congress, and that while the bill to meet his case was before the House of Representatives, on the 8th of last month, the Hon. Mr. Clingman, of N. C., rose up and stated, that "from extraordinary means resorted to he had no doubt very large sums of money had been offered to gentlemen to induce them either to vote for the Bill or absent themselves." This was a direct charge to bribe the representatives of the people, and coming from such a source it was like the falling of a bomb shell in the midst of a crowded court. Instantly there was an erection of ears and an elevation of member's heads, for this was nearly a direct charge against the integrity and purity of those friendly to the Bill. The names of informants were called for, but these Mr. Clingman refused to give, and demanded the appointment of a committee to investigate the subject. This was done two days afterwards by the appointment of one consisting of five members, with power to send for witnesses. We know that the committee exerted themselves to obtain the testimony of witnesses from many parts of our country, and were at no small amount of trouble to sift the matter thoroughly. A majority of that Committee, consisting of the Hons. J. Letcher, T. Ruffin, and N. Eddy, have made a partial report on the subject, in which it is stated that they had prosecuted their investigations since the 12th of July, with the exception of one legislative day only, but many witnesses who had been summoned could not be examined before the close of the session. They therefore recommend that the investigation be resumed at the opening of the next session, as the matter is of such importance as to justify a more careful and thorough examination. We really think so to, for the investigation has developed a mass of facts enough to make every true American blush for some of his countrymen. We have always condemned the extension of patents—except for *very* extraordinary cases—by Congress, well knowing the disreputable practices and influences which have been employed to disgrace our country in its legislative capacity as connected with the extension of some patents. The committee holds up the character of a member of Congress as something which should reach the highest standard of moral propriety, but the evidence which they present respecting the qualities of some of them composing the present Congress, falls far short of this mark. They concede that the evidence does not show that money was offered to members for their aid in this case, to influence their votes, but they say that "the means and appliances which are resorted to by interested parties to secure the success of their measures are numerous, and such as are supposed to be adapted to the characters, views, necessities, and objects of those who are to be influenced." Now what do our readers think were the means and influences brought to bear upon honorable gentlemen in order to predispose them to favor the passage of the Bill for Colt's patent? Would they believe that they consisted of gloves and wine? Yet such was the fact. The report says:—

"The money has been used, as the evidence shows, in paying the costs and charges incurred in getting up costly and extravagant entertainments, to which ladies and members of Congress and others were invited, with a view of furthering the success of this measure. The ladies having been first duly impressed with the importance of Colt's pistol extension, by presents of Parisian gloves, are invited to these entertainments, and the evidence shows that while there, members are appealed to by them to favor this particular measure. In the language of a witness, 'a dead set' was made at Hon. Gilbert Dean, to induce him 'to go for the renewal of Colt's patent.' Whether the same sort of social influence and appliance was brought to bear upon others, who were invited to dine or sup at that handsome establishment, we have no means of ascertaining, as Mr. Dickerson has not given us the names of his guests, and has not therefore furnished us with the means of getting at the facts. Mr. Dickerson seems to have adopted the rule, that

> "To reach the heart or get the vote
> The surest way is down the throat."

The committee believe that all such means of operating upon the social disposition of those who are to decide the question, are improper, and they cannot excuse their use by the agent and attorney of Col. Colt."

It is stated that $15,000 were given to the agent of Colt in this case, but the witnesses could not be made to answer how it was spent, but it was well known that splendid entertainments were given, and the influence of ladies over members through handsome sets of white kids, were sought with a tact worthy of Walpole, who asserted that "every man had his price."

There is not a single patent sought to be extended by Congress but has some opponents, and some of these, no doubt, exert their influence for the sake of being bought off. "It is in evidence," says the report, "that a contingent fee of $10,000 has been offered by Dickerson to an active opponent of Colt's Bill to buy off his opposition and to secure his countenance and support to that measure." The parties met on several occasions, and their conversations on the subject perfectly disgusted the committee, and was entirely unfavorable to "Dickerson and Day,"—the agent and the opposition.

It also seems that in Washington there is a kind of united agency of ex-members of Congress, lawyers, and others—a second House of Congress—that undertake, we suppose, for so much, to get bills passed, by feasting the honorables and making presents to their ladies. Of such a body of men the report says:—

"This combination is evidenced by another fact of striking force and significance. We find the same agents and attorneys acting in behalf of the same bills—patents, railroads, &c. This would hardly be the case unless such combination were indispensable to success. Men who have good measures are generally willing to allow them to stand or fall on their own merits or demerits, without seeking support from other sources. Such has not been the case, however, with Colt's application, if the evidence is to be believed."

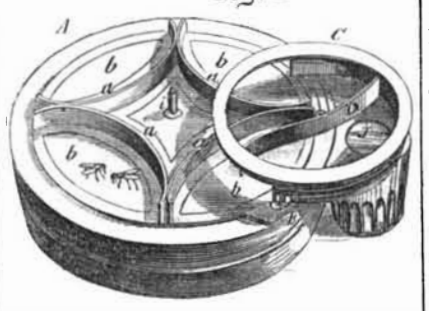
It has also been found by the committee, that the correspondents of the daily papers who have been admitted to desks on the floor of the house, were regarded as the most efficient agents that could be employed by those who had measures to advance, and although these gentlemen are required to give a personal pledge of honor that they are not employed as agents to prosecute any claim, the committee say, "we find that in utter disregard of this pledge and its spirit, they (the correspondents) have been employed in many of the railroad, patent, and other schemes which have engaged the attention of Congress during the present session."

We have quoted enough from this report to show what the tenor of it is. It does not spare the agents of Col. Colt, nor any connected with prosecuting his claims, but while it is bold and manly in this respect, it is neither bold, open, nor candid, in respect to those members of Congress who sipped the wine and eat the beef provided by Col. Colt's money. It may be asserted that it would not be *honorable* to present the names of those members of Congress who were guests at such entertainments, but if the members of the committee considered it their duty to present the names of the providers of these feasts, surely it was a more imperative duty for them to give the names of the public representatives who were so amply provided for at those feasts.

Again and again have we heard it asserted, that Washington was a den of corruption, and this report is confirmatory of such charges. If all members of Congress possessed such lofty characters for honesty and uprightness which this report asserts they should possess, no such combinations of men, and no such practices as are described in this report, would exist in Washington.

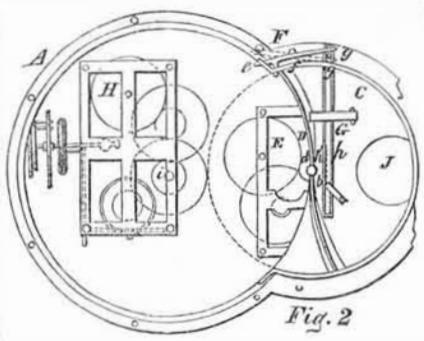
### Fly Trap.

Fig. 1




On the 18th of last April, a patent was issued to David and Samuel Flanders, of Parishville, N. Y., for a Trap for Catching Flies, which is represented by the annexed engravings. Figure 1 being a perspective and figure 2 a top view—the rotating disk and wiper-box of the trap being removed. The same letters which occur on both figures refer to similar parts. The nature of the invention consists in having a horizontal circular rotating disk divided in its upper surface, by four upright ledges into four sections, which, as the disk rotates, pass in succession underneath a portion of a circular cover or top of a box, which contains a wiper that sweeps the surface of the sections, and throws the flies into the box behind the wiper. The sections on the disk are baited, in order to attract the flies upon them; and a glass vessel containing water is placed underneath an aperture in the bottom of the wiper box, into which the flies fall. Motion is communicated to the disk and wiper by clock machinery or its equivalent.

A represents a circular box of suitable dimensions, on the upper part of which is a disk having upon its upper surface four upright ledges, *a a a a*, which are curved inward, or in a reverse direction to the edge of the disk, H,




the edges of said ledges terminating at the edge of the disk, see figure 1. These ledges divide the disk into four sections, *b b b b*.

C is a box of segmental form, placed at the side of the disk, the bottom of the box being flush or even with the disk. The cover or top of the box, C, is circular, and projects over the disk at a distance equal to the breadth of one of the sections, *b*, or a little more than this. At the edge of the disk and box, C, there is a wiper, D, which is a metal strip placed edgewise in the box, C, and working upon a spindle, *d*, which is attached at the center of the wiper. The wiper is of such hight as to correspond with the depth of the box, C. Upon the spindle, *d*, of the wiper, and directly underneath it there are two teeth which project at opposite points from the spindle. The spindle, *d*, of the wiper, D, is attached to or is a portion of the strike movement, E, of an ordinary clock, and the stroke movement causes the wiper to rotate when liberated from a catch lever, F. This catch lever is at one side of the box, C, and has a small projection, *e*, which hooks over one end of the wiper. The fulcrum of the catch lever is at *f*, and its outer end fits between pins, *g g*, attached to one end of a bar, G, the opposite end of which is provided with teeth, *h*.

H is the time movement of a clock, and the top disk is suspended upon or attached to a shaft, *i*, of the movement. This movement, H, causes the disk to rotate. I is a glass vessel which is filled with a requisite quantity of water, and placed underneath an aperture, J, in the bottom of the box, C.

Operation.—The time and strike movements are wound up and the sections, *b b b b*, properly baited; the implement is then placed in the desired spot, and as the top disk, B, rotates the sections, *b*, will pass in succession underneath the cover of the box, C. When one of the sections, *b*, is directly underneath the cover of the box, C, the ends of the ledges, *a*, will have moved back the catch lever, F, and free the wiper from the projection, *e*, when the catch lever was thrown back, the bar, G, was thrown further back, or past the spindle, *d*, of the wiper, as shown by dotted lines, figure 2. When the wiper is freed from the catch lever, it rotates, owing to the movement, E, and sweeps the surface of the section throwing all the flies upon the surface of the section into the box, C; the wiper making one revolution and a half, and is then stopped by the catch lever. The teeth on the spindle, *d*, catch into the teeth, *h*, on the bar, G; and the bar, G, and catch lever, F, are thrown back to their original position, as the spindle, *d*, rotates, by the time one revolution and a half of the wiper is made. Thus the sections pass under the cover of the box, C, and the flies swept off of their surfaces. The two movements are wound up with a key similar to an ordinary clock.

It is intended that the disk should move or rotate gradually, so that the flies will alight upon the sections, and remain upon them till the sections pass under the cover of C.

The surfaces of the sections may be corrugated, or have indentations made in them to receive the bait, it order that it may not be swept off by the wiper. The box, C, behind the wiper being dark, the flies, as they are thrown into the box behind the wiper, will, attracted by the light, pass down the aperture, J, and will fall into the vessel of water, I.

More information may be obtained by letter addressed to the patentees.

### Steam Carriages for Common Roads.

In the new York "Daily Times" of Wednesday, last week, there appeared an article on the above subject, in which a great number of epithets were bestowed upon the Editor of the "Scientific American." These can neither hurt nor move him, but with his ideas of a pure newapaper literature, he cannot conceive how any paper desiring to maintain a respectable character could admit such language into its columns. The object of the letter is to deceive the public in reference to the entire failure of all steam coaches to run economically on common roads. A brief history of such efforts in our next number will show this to a discerning community, so that they may not be led astray by any vamped scheme now brought before them.

### To Our Readers.

We request the attention of our readers to our "New Prospectus," which will be found on another page; and also to the prizes which are here offered for subscribers to our next volume. Those prizes are liberal in their character, and we conceive them to be devoted to beneficial objects both as it respects those who obtain prizes and the purpose for which they are given. This is all we will say on this subject, at present, but next week we will take occasion to invite the attention of our readers to some views worthy of their serious consideration.

### $570 IN PRIZES.

The Publishers of the "Scientific American" offer the following Cash Prizes for the fourteen largest lists of subscribers sent in by the 1st of January, 1855.

**$100 will be given for the largest list,**
**$75 for the 2nd.** **$35 for the 8th,**
**65 for the 3rd,** **30 for the 9th,**
**55 for the 4th,** **25 for the 10th,**
**50 for the 5th,** **20 for the 11th,**
**45 for the 6th,** **15 for the 12th,**
**40 for the 7th,** **10 for the 13th,**
**and $5 for the 14th.**

The cash will be paid to the order of each successful competitor; and the name, residence and number of Subscribers sent by each will be published in the "Scientific American," so as to avoid mistakes.

Subscriptions can be sent at any time and from any post town. A register will be kept of the number as received, duly credited to the person sending them.

☞ See new prospectus on the last page.

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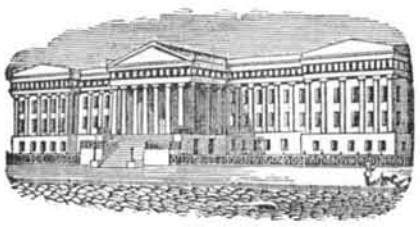

[Reported Officially for the Scientific American.]

## LIST OF PATENT CLAIMS

### Issued from the United States Patent Office

FOR THE WEEK ENDING AUGUST 8, 1854.

MAKING BRICKS.—R. D. Bartlett, of Bangor, Me.: I claim making bricks of crude untempered and unground clay, as described or any other equivalent means.

Second, the manner described of forcing the clay in the state in which it is dug, through the grating, in small quantities at a times, by which means it is freed from the stones which it may contain, and prepared to be acted upon by the plunger, as set forth.

Third, the method of accurately gauging the quantity of clay in each brick, and of submitting them all to a uniform pressure by means of the hole in the side of the mold, as described.

Fourth, the manner of arranging and operating the bulkhead, by which it is enabled to assist simultaneously in the formation of two bricks, one in each mold.

Fifth, the combination of the bulkhead and the plunger with the lever, as described, the lever having sufficient play upon its fulcrum to enable it to operate as set forth.

Sixth, I claim making the parts of the mold hollow and heating them with steam, as described.

DUMPING WAGONS—W. S. Babcock, Stonington, Conn.: I claim the arrangement of the cast metal boxes or sockets containing concave wheels. The convex track, and ground tracks, and grooved track, and hooks.

I also claim the arrangement of gearing, drum, crank, ratchet, chain, &c., all operating as set forth.

TUBULAR BRIDGES—E. A. Baldwin, of Elmira, N. Y.: I claim constructing a bridge by the combination of the longitudinal strips of wood, the transverse iron bands, and the arrangement for tightening the same from the inside by a screw and swivel with the trestle or frame work for supporting a railroad track, and receiving the strain directly on the bands, whether the track be placed within the bridge or upon its top; the whole arranged and combined as described, forming the cylindrical or tubular bridge.

PROCESS OF IMITATING MARBLE, &C.—Wm. Bonny of New York City: I do not claim the compounding of cements or other materials for making imitations of marble or other substances; nor the placing on, or disposition of the veins, &c., with a brush or other similar instrument, or by the use of fibrous materials.

But I claim the manufacture of imitations of marble and other substances from cement or other materials analogous thereto, by the application, as set forth, of the requisite coloring matter prepared as described, either to the surface of the cement or to a polished surface or mold by means of a syringe, or such instrument.

AIR HEATING STOVES—N. A. Boynton, of New York City: I claim constructing the entire fire chamber of one single casting or piece, as set forth.

FIRE ARM—I. W. Brown, of West Springfield, Mass.: I claim, first, giving the cylinder a partial rotation by the cocking of the fire-arm, and completing the movement necessary to bring the nipples successively under the hammer by the act of discharging the piece, as described.

PREVENTING RATTLING IN CARRIAGES—Wm. S. Chapman, of Cincinnati, Ohio: I claim the employment of blocks of india rubber or equivalent elastic material of the form set forth, between the ends of carriage shafts and the clips upon the axles, for the purposes of preventing wear, rattling, noise, and accident, as set forth.

COTTON PRESSES—Nathan Chapman, of Mystic River, Conn.: I do not claim the toothed wheels with projections thereon separately, nor operating the follower by chains.

But I claim forming the hubs of the wheels with recesses in them to receive the rods, when said chains are wound upon the projections on the wheels, as described.

SAWING AND PLANING MACHINES—Daniel Close, of Hammonsburgh, Pa.: I claim the arrangement of one or more saws to cut on the down stroke, in combination with one or more planes to cut on the up stroke of the crank, as set forth, whereby the sawing and planing are performed alternately, which tends to equalize the motion of the machine, and make both instruments work more smoothly.

ROSIN OIL LAMPS—Silas Constant, of Brooklyn, N. Y.: I claim constructing the tubular wick guide without any opening through it, except at or near its lower end, and making said guide of such a size as to allow a clear annular space between it and the wick for the oil to rise in around the wick, for the purpose of preventing the oil inside of the upper portion of said wick guide from mixing with the body of oil outside of the same, by which the oil in contact with the upper portion of the wick will be raised to a considerably higher temperature than the oil in the body of the lamp, as set forth.

I also claim the regulating of the flame of the lamp, by raising or lowering in any convenient manner, the inner conical tube which immediately surrounds the upper end of the wick, as set forth.

STOP MOTION OF SPEEDERS—Lewis Cutting, of Lowell, Mass.: I claim, first, the use of the independent hinged lever rod or wire, moving in guides for tripping the shipper, and throwing off the belt, thus relieving the trumpet from any further duty in throwing off the belt, than the mere raising of said lever rod or wire, which makes its operation more certain, as described.

I also claim, in combination with the hinged lever the interposition between the cam and trumpet of a guide, so arranged as to give sufficient friction to the roving when it rises irregularly from the cam to prevent the dropping of the trumpet and consequent throwing off of the belt, as described.

PIGMENTS FROM IRON ORE—J. H. Davis, of Morristown, N. J.: I claim the process described for making said colored pigments by the steaming of said ores in addition to the usual process of selecting, pulverizing, and heating the same, for the purpose of obtaining pigments.

FIRE ARMS—Joseph C. Day, of Hackettstown, N. J.: I claim, first, connecting the barrel with the stock and stationary breech, by means of projections on its sides having one part of circular and another part of wedge form, and fitting within recesses in plates, or their equivalents, attached to the stock, which recesses correspond in form with the circular part of the projections but are wider than the wedge-shaped parts thereof, as described, and thereby admit of a limited swinging movement of the barrel for the purpose of exposing its rear end, as set forth.

Second, the sliding collar sliding over the stationary breech, and the rear end of the barrel, as described, for the purpose of making a close joint between the barrel and breech.

Third, though I do not claim the tube, the piston, ratchet bar, and spring, separately or irrespective of the particular arrangement shown I do claim their particular arrangement, as described, whereby the following results are obtained, viz., first, a sure forward movement of the caps without the assistance of a spiral spring.

Second, convenience for replenishing the tube without removing it from the stock.

Third, the explosion of a cap already on the nipple, without bringing another from the magazine.

GROOVING BOARDS—G. C. Fisk, of Dansville, N. Y.: I claim the excavator or bit, constructed as described, in connection with rotary saws for tonguing and grooving boards at the same time that their surfaces are planed, as set forth, and for such purposes as it may be applied.

MELODEONS—O. N. Frary, of Ansonia, Ct.: I claim the method of using two sets of reeds in a melodeon with one set of keys, in such a manner as to combine any two, three, or all four of the parts (each part containing one half of a set of reeds) at pleasure, by the aid of an air-tight wind chest, and four valves, when the whole is constructed, arranged, and made to operate as described.

SALT PACKING MACHINES—J. G. Fulton, of Middleport, Ohio: I claim, first, the conical stampers having radial grooves, for the purpose described.

Second, the yielding tooth in this connection to enable the commencement of the lifting action without damage to the teeth.

RADIATORS—John Gemmil, of Mercer, Pa.: I claim the suspension within a radiating case, as described, of a deflector and regulator, constructed, arranged, and operating as set forth, for the purpose specified.

BRICK PRESSES—Josee Johnson, of Fort Smith, Ark.: I claim, first, the combination of the double cam or cams at the end of the lever or levers, and attached to and acting upon the plunger or plungers, and their friction rollers, arranged, and operating as set forth.

I further claim, for the purpose of operating the cut-off, the combination of the two levers with the friction wheels or their equivalents at the end of the sweep, as set forth.

FIRE ARMS—Daniel Knight, of Salem, Ind.: I claim the horizontal sliding hammer constructed as described and combined with the operating mechanism which constitutes the trigger, in combination with the barrel, which has the nipple in its breech, when said barrel is arranged forward from the hand of the shooter and in front of the protection shoulder formed by the tube, as set forth.

SPRING BED BOTTOMS—Wm. H. Merriwether, of New Braunfels, Comal Co., Tex.: I claim the spring bottom constructed of zig-zag wire, arranged and constructed as set forth.

REFRIGERATORS FOR MARINE ENGINES—Joshua Merrill and Geo. Patten, of Boston, Mass.: We do not claim conducting the condensed steam or hot water through an annular space for the purpose of cooling it, as that has before been done.

But we claim our improved refrigerator or water cooling apparatus, consisting of the concentric tubes, and the chambers above and below the same, combined and arranged as described, whereby the condensed steam or hot water is conducted into annular spaces separated into thin films, and brought in contact on both sides with cold surfaces, the cold water or cooling medium passing through one set of pipes and around the others, as set forth.

We also claim providing a separate vessel or receptacle, through which the injection water, drawn from the condenser by the air pump is made to pass before entering the refrigerator so as to permit the oil to be separated and drawn off from the water, as described.

BUGGIES—J. S. McClelland, of Jefferson, Ind.: I claim the arranging of the body upon spring couplings in such manner as that additional pairs or sets of springs shall come into action, as the weight is increased on the body, and this in combination with the fastening of the body forward of its center to one set of springs and in rear of its center to another set of springs, so that the body may have a rocking motion, transversely, and the tendency of the body to yield at one point be counteracted by its lifting the spring in another point, as described.

MAKING BRICKS—John McMurtry, of Lexington, Ky.: I do not claim the construction of the mold cylinders or arrangement of the molds, as described; but I claim, first, the combination with one or more such mold cylinders, having molds arranged as described, of as many plunger heads and plungers as may be desired, said plunger heads being arranged to work readily to the cylinders, and operated by any suitable means whereby they are caused to compress the clay in the molds, as set forth.

Second, arranging two mold cylinders, such as are described, parallel with each other, and placing between them two plunger heads attached to the same rod, or otherwise arradged so as to work in a line or plane passing through the axes of both cylinders, and thereby to cause one to advance towards its cylinder to compress the clay in one or more of the molds, as the other recedes from its cylinder after a similar operation, as set forth.

Third, the method described of giving motion to the mold cylinder during the receding movements of their respective plungers, by means of the toothed wheels u, on the cylinders, the levers on the cylinder shafts and their pawls, and the coupling rod, which has arms with which the plunger heads come in contact at a proper time during their movements, the whole combined and operating as set forth.

Fourth, the method of locking the cylinders during the advance of their respective plunger heads, and of setting them free to turn during the receding thereof, by means of the catches, attached to the frame, the hooks, connected with the plunger heads, and a spring applied to the catches, all combined and operating, as described.

SOFA BEDSTEADS—Stanislas Millet, of New York City: I claim, in combination with a spring bottom, as represented, the attaching of the sagging bottom to the hinged head and foot board, so that said sagging bottom shall be strained over the spring bottom, when the head and foot pieces are dropped to form a bed, and serve the purpose of a lining between the mattrass and the springs, when used as a sofa or lounge, as described.

GRADUATING CARPENTERS' SQUARES—N. Millington and D. S. George, of Shaftsbury, Vt.: We claim, first, the arrangement in a single frame, as set forth, of as many gravers, as there are units to be divided so as by the action of the cam wheel, or its equivalent, simultaneously to trace, of the proper length, each set of division and fractional lines.

Second, the balance frame with its appendages to equalize the pressure of the spiral springs on the graver handles, so as to give the same depth of mark on the thin as on the thick end of the taper square.

Third, the inclined plane, with its appendages, for moving the square longitudinally, and dividing the inch into any desirable number of equal parts.

Fourth, the carriage arranged to press the square up against the points of the gravers by a cam or otherwise. All the several parts, or their equivalents, to be arranged and combined as specified, or in any similar manner which shall produce the intended effect.

SPRING BODY CARRIAGE—Alex. Moffit, of Brownsville, Pa.: I claim the construction of the body of wheeled carriages of a pair of metal springs, so formed and arranged that the curved portions thereof supporting the seat shall admit of greater flexion while their connection with the horizontal portions of said springs is kept up, thus uniting the hind axle and front bolster, as set forth, for the purpose of reducing the weight and expense of construction.

WOODEN PAVEMENTS—Samuel Nicolson, of Boston, Mass.: I claim to so combine or arrange to the blocks or wooden portion of the pavement that there may be cells or channels formed by such arrangement between them, as described, and for the reception of tar and gravel, or materials of like character, and that each cell or channel shall have a wooden bottom for the tar and gravel cement to rest upon, whereby, when the mass of tar and stone in each cell is pressed down by the wheels of carriages it shall be prevented from being forced through the cavity and caused to be spread in lateral directions, so as to maintain a firm and close joint between the adjacent blocks, such as will operate to prevent water from passing down between their joints

STONE DRESSING MACHINES—T. Porter, of New York City: I do not claim the employment of a rest in combination with a hammer and tool stock working in ways attached thereto, nor do I confine myself to any particular form of rest.

But I claim, first, the employment of a rest having its face parallel with the contiguous face of the tool stock, when the said rest is rigidly attached to the ways in which the hammer and tool stock work, or forms part of the same frame therewith, and when the frame thus formed is provided with, and swings from journals which fit in journal boxes, suspended or supported in a suitable manner in the main framing of the machine, so that the ways may be adjusted to different angles of the surface desired to be cut on the stone without changing the relation of the hammer, the tool, and the rest.

Second, constructing the tool stock and arranging it relatively to the rest, and the hammer, so that it is capable of vibrating as described, to allow the tool, resting upon the surface of the stone, to be carried back by the feed motion, and cause it to be driven by the blow of the hammer, not in the line of the direction of the blow, but forward in or nearly in the line or plane of the surface desired to be produced, as set forth

CLOVER SEPARATOR—Christian Reif, of Hartleton, Pa.: I do not claim any of the parts of my machine separately, but I claim the described arrangement of the seives and carriers for cleaning clover seed, as set forth.

VENTILATING RAILROAD CARS—Cheeny Reed, and Brooks K. Mould, of Chicago, Ill: We are aware that it has been essayed to ventilate railroad cars by means of an apparatus placed above the car and provided with a trumpet mouth or spout at each end, leading to a reservoir communicating with the inside of the car, and provided with a flap valve to form the communication between either one of the spouts and the inside of the car, and to close the aperature to the other, and vice versa; and we are also aware that such an apparatus has been provided with vessels containing water, and with a series of fixed partitions consisting of slats covered with sponge or other substance partly immersed in water, that they may be kept in a moist state by capillary attraction with the view to intercept dust and permit the cleansed air to pass through to the inside of the car, and we are also aware that it has been attempted to separate sparks and other impurities from the smoke of locomotive engine chimneys, by means of rotating fans which draw the smoke from the smoke-box and force it into a chamber or chambers containing a wheel or wheels, rotated by the force of such current, and partly immersed in water to cause the smoke to pass through the water on its way to the escape chimney to separate the sparks therefrom; we claim none of these devices.

But we claim the method described of ventilating railroad cars, by combining with a vessel or apparatus which receives a current of air through a spout or spouts by the motion of the train or any equivalent therefor, and discharge it into the car, as specified, a hollow rotating cylinder composed of one or more series of slats or their openwork, or their equivalents, and partly immersed and rotating in water, as specified, so that the air passes through the said cylinder, on its way to the inside of the car, the dust shall be separated therefrom by impinging on the moistened surfaces whilst the rotation of the said cylinder in water has the effect to wash off the accumulated dust and to keep the surfaces presented to the passage of the air in a moistened state, as specified.

CUTTING BOOT AND SHOE SOLES—Luther Ross, and Potter G. Ross, of Worcester, Mass.: We do not claim the use of any particular curve, nor the revolving of the knives between the cutting.

But we claim placing the curved knives upon an axis so that their cutting edges shall correspond to portions of the surface of the cylinder, so that a small portion only of the knife is cutting at any one time, for the purpose of cutting soles for boots and shoes.

We claim the driving of the feed rolls by the adjustable wheel, in combination with the arrangement of the table, and guide rail, as described.

CARTRIDGES—Horace Smith and B. B. Wesson, of Norwich, Conn.: We are aware that in the construction of a cartridge it has been customary to use in the same a metallic plate or disk carrying a capsule for containing the percussion powder, and having the mouth of such capsule opening directly against the gunpowder in front of the said plate, we do not therefore claim such.

But we claim the employment in the cartridge of the metallic or endurated disk or seat plate, so that it shall rest directly on the powder in combination with arranging the priming or percussion powder in rear of said disk, or on that side of it opposite to that which rests against the powder; our said arrangements of the disk and priming affording an excellent opportunity for applying the force of the blow by which the priming is inflamed, such force being applied in the line of the axis of the cartridge,

LARD LAMPS—Ira Smith and John Stonesifer, of Boonsboro, Md: We claim the improved piston, composed of two adjustable compressing plates that embrace between them a disk of leather or other equivalent material, dissected in the manner represented and described; to wit, the said disk having an outwardly tapering and independent piece inserted into a corresponding shaped recess, so that as the periphery of said piston wears away by use, it may be enlarged by simply loosening its compressing plates, drawing out the said piece a short distance and then tightening said plates, and trimming off to the proper curvature, the etremity of the piece, as set forth.

CAR COUPLING—T. B. Stout, of Keyport, N. J.: I claim the arrangement of the stop springs and coupling bolt, in connection with the ordinary link, as described, for the purpose of admitting of self detachment of the cars, by the end of the being thrown, as set forth.

I also claim said stop, springs, bolt, and link, in combination with the forked lever, operated by the windlass, as described, for the purpose of detaching in safety a car or cars at the will of an attendant, while the train is in motion.

SPRINGS TO WINDOW SASHES—A. G. Safford, of Boston, Mass.: I do not claim the application of a slide and its springs to a window sash so as to work or slide against the jamb, and by friction created by the pressure of the springs maintain the sash at any elevation within the window frame.

Nor do I claim the making of one of the joints of the window frame movable, and to be pressed towards the sash or sashes by springs, while said sash or sashes move or slide in curved grooves.

Nor do I claim the application of the springs to the movable jambs or bar, so as either to press the sash in the direction of its planes or at right angles thereto.

But I claim the arrangement of the slide or slides, and the springs, with respect to the window sash and the rectangular groove of the stile or jamb of the frame whereby the two sides of each slide are pressed at once by the springs against the two right angular sides of the groove, and the sash forced in two directions, and particularly against the weather side of the groove, as stated.

CUTTING BOOT AND SHOE SOLES—John Thompson, of Marblehead, Mass., and A. S. Moore, of Lynn, Mass.: We claim, first, the combination of the sector and pinion with the cylinder and clamp spring, operating as set forth.

Second, We do not claim the mere adjustment of the crank and eccentrics on the shaft; but we claim communicating both a vertical and intermittent rotary motion to the knives from the continuous motion of the fly wheel by the means set forth (to wit, the eccentric operating the vertical slides which support the cutter shaft, and the geared cylinder or its equivalent engaging and disengaging with said shaft, and operated by the sector or equivalent, the motion of which is derived from the crank,) or by other means equivalent, whereby we are enabled to secure the partial ascent of the knives before the commencement of their revolution by the proper adjustment of the eccentrics to the crank.

Third, passing the screws which confine the knives to the cutter head through the sliding boxes, in the manner described for the purpose of adjusting the knives to different widths of toe and heel without loosening the screws which confine them to the cutter head

HAME FASTENINGS—Edward Turner, of Baltimore, Md.: I claim in the described fastening for hames, a curved rack, fitted to traverse in a groove provided with a vibrating catch operated by a spring, as described.

FURNITURE CASTERS—Philos B. Tyler, and Benjamin Lathrop, of Springfield, Mass.: We do not claim the metallic caster roller, but we claim the improved caster roller as made, both externally and internally, as denoted, that is to say, with a bent rim united to an annulus or disk made flat for some distance from the rim towards the hub, the bended rim and flat disk producing a saving of the usual amount of metal which would have to be employed in the angles between them in order to insure the requisite strength and stiffness to the roller.

SELF-HEATING SMOOTHING IRONS—William Wickersham, of Boston, Mass.: I claim the making of the handle in part or in whole, the reservoir for containing the combustible fluid, as specified.

I also claim combining with the bottom of the flame chamber one or more connections or columns extending therefrom and for the purpose of intercepting heat and conducting it downwards into the bottom of the flame chamber, as specified.

I do not claim the mere application of a non-conducting material to a surface in order to prevent the escape of heat therefrom, but I claim the non-conducting material arranged on the top of the iron, in combination with conductors leading from the top of the flame chamber down to the bottom of said flame chamber, by which combination, as specified, the surplus heat in the top of the flat is saved and conducted into the bottom of the iron, as described,

DOCUMENT FILE OR HOLDER—Henry E. Woodbury, of Washington, D. C.: I claim the box or compartment document, file constructed and operating as described, and consisting of a box part and spring plate or holder, the said holder being hung or attached to the spring at its back in such a manner as to give a flexible character to the holder, and admit of its being leaned back, or to either side to facilitate the reading of the indorsements, and the abstraction from, or insertion of certain papers to the file without releasing the other papers from the hold of the platen, and the whole forming a more convenient file for the filing away of folded documents, and to protect them from abrasion, &c., as set forth.

SHUTTLE GUARDS FOR POWER LOOMS—Peter Migget, of Hoosick Falls, N. Y.: I claim the shuttle box guard constructed as specified, of rollers on either side of the center longitudinal line of the shuttle, and projecting from a spring bar roller down into the box, as shown and described, whereby the shuttle is more effectually restrained from rising at the end next the warp, on leaving the box, thus preventing the shuttle from flying out of the loom or more truly inclining it to run in its course, friction is diminished, the shuttle less exposed to injury or wear, and kept from turning or entering the opposite box edgewise, as set forth.

ROLLERS OF FURNITURE CASTERS—Leroy S. White, of Chicopee, Mass., (assignor to Benj. Lathrop, and Philos B. Tyler, of Springfield, Mass.:) I do not claim making the shank of the caster detachable from its socket; nor do I claim the employment of a spring to hold it in the socket; nor the arrangement of said spring in a groove made in and around the shank and making the spring to bear against the internal surface of the socket made without a groove: nor do I claim the arrangement of the sustaining groove of the spring in the socket instead of in the shank, so that when the shank is being drawn out of the socket, or when it is within or out of the same, the spring will remain in the socket; but I claim the described mode of arranging or applying the spring and the sustaining groove or recess thereof, to the socket tube and the shank, the sustaining groove of the spring being formed in the outer surface of the socket tube, and the spring being made to embrace the socket tube and project through and into the groove of the shank as specified.

SEWING MACHINES—Alfred Swingle, of Boston, Mass., (assignor to Elmer Townsend, of same place:) I claim the combination of the rotary fork thread carrier and the hook as made to operate in connection with the needle and perform sewing, substantially as specified.

BLASTING ROCK, TIMBER, &C.—John Norton, of Cork, Ireland: I do not claim the percussion cartridge, the frictional pill box, or the frictional cork, as described.

But I claim, first, the frictional cord divided in two parts, and slightly spliced together in combination with an inflammable compound with which the splice is covered, as described, and for the purposes specified.

Second, the safety bridle guard constructed and applied, as described, and for the purpose specified.

CONSTRUCTING IRON BUILDINGS—Amos J. Saxton, of Brooklyn, N. Y.: I do not claim to have invented mortises, tenons, lugs, grooves, chamfers, common keys, or any simple dove-tail joints.

But I claim, first, the method of connecting and combining all the different points, by all or any of the improved joints, so arranged at all of the different points by all or any of the different joints, as when joined by the different joints, at the sectional points as herein set forth. The use of screws, rivets, bolts, or nails is not required in the erection of iron frame, fire-proof, or other buildings.

Second, I claim the method, mode, or process of erecting iron fire-proof and other buildings, and of uniting or connecting each substantial part to each other, or of connecting them at all of the sectional points by the different joints, as described, without the use of screws, rivets, bolts, or nails, as set forth.

Third, I claim the method, mode, or manner of so arranging and combining the different points of the columns, post or studs, girders, beams, ashlers, and interior plates, or any of the sectional parts of the buildings with the different joints, so combined in such a manner as when the different points are properly united and combined with the different joints in all of the sectional parts, they form a substantial iron frame, fire-proof or other buildings, as described, in all of the different combinations.

BUSHING SHEAVES FOR SHIPS BLOCKS—Weatherell Taylor, of Camptown, N. J.: I claim securing the bush to the sheave, by fitting the flange into the recess on one side of the sheave, and the bevel edged ring into the recess on the opposite side of the sheave, and swagging the bush on to the bevelled edge of the ring, as set forth.

FAN BLOWER—Solomon W. Ruggles (assignor to himself and A. R. Smith,) of Fitchburg, Mass.: I claim in the blast wheel receiving air in two opposite directions at one and the same time, the application of a deflecting rib to the middle of, and so as to extend beyond the propelling surface of each of the curved wings of the blast wheel, and formed so as to deflect the currents of air entering the wheel laterally in the opppositedirections and prevent them from that contact or impulsion against one another which produces the humming or buzzing noise, as set forth.

BRAIDING MACHINES—James A. Bazin, of Canton, Mass.: (assignor to Alfred B. Ely, of Boston, Mass.: I claim the above described movable guides constructed and operating in the manner and for the purpose described.

Secondly, I claim the method described of constructing the bobbin holders, the parts which carry and guide the threads being connected with the stem by means of springs, which enables the bobbins to yield without permitting the strand to render too freely.

Third, and I also claim in combination with the above method of constructing the bobbin holders, the described method of drawing off the finished braid, over the spring plate.

Fourth, I claim the disk operating in the manner and for the purpose described.

#### RE-ISSUE.

GOLD AMALGAMATOR—Wm. Ball, of Chicopee, Mass. Original letters patent dated Sept. 9, 1851: I claim the combination of the partition (dipping below the surface of the water) with the lower distributor provided at the center with a discharge aperture for the water and light particles, and at the periphery with apertures for the discharge of the water and heavier particles for the purpose of preventing the escape of gold over the central or waste pipe.

I also claim the arrangement of the sliding tube, ferrule, or waste gate directly upon the hollow axle of the lower distributor, the same being for the purpose of regulating the head of water within the said distributor.

I am aware that it is not unusual in gold washers to use a succession of baths, therefore I do not claim such arrangement in general.

But I claim arranging the secondary mercury bath concentric with and below the primary one in such a manner that the current of water, etc., return towards the center of the apparatus, thereby saving room and causing said currents to pass more slowly)

I also claim rubbing the pulverized ore into the mercury in the manner and for the purpose described.

#### DESIGNS.

COOKING STOVES—Wm. M. Snow, of Providence, R. I.

COOKING STOVES—Samuel H. Sailor, (assignor to Abbott & Lawrence,) of Philadelphia, Pa.

FRANKLIN STOVE—John F. Allen, and Joseph Stewart, (assignors to Abbot & Lawrence,) of Philadelphia, Pa.

**[There are a number of valuable inventions in the above list of claims, which we should like to call to the special attention of our readers by a separate note underneath, as it was formerly our custom to do, but the list is so lengthy our space will not permit it. A number of our clients will recognize their names in the above list.**

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## TO CORRESPONDENTS.

J. M. D., of N. Y.—We do not know of any plan or substance that will prevent the varnish you describe from cracking, as it becomes old.

J. B. T., of N. J.—Your plan for elevating water is new to us, but we do not believe it to be so efficient as many of the pumps now in use.

H. C. H., of——.—You are very unfortunate in your comparisons, like Agassiz himself. The Jewish race, instanced by you, is conclusive proof against the human fauna theory. Their history is our evidence.—Great scientific attainments do not prevent men committing blunders of judgment.

B. T., of Me.—We could not tell you respecting the amount of effect from the quantity given.

M. D., of O.—Your demonstration proves the truth of what we said, as you give the difference of velocity for the half stroke, and both say and show that the other half is equal. We alluded to the stroke at a full revolution of the crank.

W. K. P., of Mass.—We really cannot tell you what quantity of gunpowder is equal to one horse power; gunpowder engines have been often proposed to us, but we have always "extinguished" them with steam.

H. B. A., of Ala.—The fire-proof brick are made of fire proof clay, a natural production, deposits of which are found in various parts of the world.

A Constant Reader, N. H.—Will be pleased to send us his name, and then he will get an answer respecting the best works published on Daguerreotyping.

A Phila. Sub.—We "know nothing" of the locomotive described in the extract he has sent us. The affair is too highly colored to be worthy of implicit reliance.

B. T. N., of N. Y.—There are various opinions entertained respecting the angle of wind-mill sails. We would refer you to Smeaton's experiments, which are too long for us to present here.

H. C. T., of Ill.—In what paper did the paragraph appear respecting balloonists at a great hight, seeing the bottom of deep rivers? It is all nonsense.

J. B., of N. Y.—Your draft does not show an electric engine that would be of any utility. Try the experiment, and you will be satisfied of this.

A——of——.—Did you ever know of a case of damages being granted for the use of a device, &c., before the patent was granted for the same. If so, give us a case. The sections of the Patent Law to which you refer, do not say a word about damages for the use of an invention before it is patented.

E. T. S., of Ohio.—Your plan of railroad telegraph is not new; it has been proposed before and is not patentable.

J. M. O. B., of Maine—Your plan of breaking flax is new to us, but we do not think it will be very efficient: it is such a question, however, as can only be settled by experiment.

A. A. Y., of Pa.—The meaning of the words we used were the arrival of the piston at both ends of the cylinder with the same speed, and the departure at both ends with the same velocity. Our opinions do not disagree with yours, nor with our other correspondent, the mistake being made about the stroke.

J. Y., of Pa.—Melt your copper first then put in your zinc. Ground glass, sprinkled on the top of the molten metals in the crucible, both concentrates the heat and prevents the zinc from evaporating; ground white sand will answer as well as the glass.

W. J., of Ct.—We do not know where the Coachmaker's Guide is to be had in this city: the price of the work is $5.

H. Beitzell—Your model of the seed drill came duly to hand, accompanied with a letter of explanation. The description has got mislaid: your address is forgotten, and we shall remain at a loss what to say to you or where to address, until you write us again.

M. L. B., of Pa.—The publication called the "Builder" is published in London once a month. We don't know of their having any special agents in this country. G. P. Putnam & Co., of this city would order it for you.

J. H. M., of Va.—Spirit levels constructed with the degrees laid off, as in your sketch are very common.

C. L. P., of Ind.—On page 323, present Vol. Sci. Am., you will find a claim to a patent granted to E.H. Sprague for locking up printer's forms: we know of none other. An engraving of Mr. Sprague's invention will be published in our columns in a few weeks, perhaps you had better wait and see it.

G. A., of Fla.—That is a pretty big musquito story you relate, but if you will send for one of Haskin's canopies, which is described in another colamn, we think it will protect you from the scourge—at least while you are under it.

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Money received on account of Patent Office business for the week ending Saturday, Aug. 12:—

G. B. F., of Vt., $25; R. W., of O., $55; C. T., of N. Y., $55; J. J. O., of La., $20; E. B. B., of N. Y., $10; J. D., of N. J., $30; A. D., of N. Y., $10; S. T., of Ind., $30; H. W. W., of N. Y., $25; S. & N., of Ct., $30; W. M. W., of N. Y., $30; T. M. C., of Me., $30; J. M., of Ind., $25; H. B., of N. Y., $25; G. W., of Ill., $30; J. T., of Mass., $50; E. A., of Ct., $25.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, Aug. 12:—

C. P., of Pa.; H. B., of N. Y.; P. T., of Pa.; H. W. W., of N. Y.; J. M., of Ind.; E. A., of Ct.


# ADVERTISEMENTS.

**Terms of Advertising.**

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☞ All advertisements must be paid for before inserting.

**PREMIUM SELF-ACTING DRILLING MACHINES**—Price $250—The best article made; to be seen at the Atlas Foundry, Jersey City, N. J. Address JOHN F. WARD & CO. 49 2*

**OIL! OIL! OIL!**—For railroads, steamers, and for machinery and burning—Pease's Improved Machinery and Burning Oil will save fifty per cent., and will not gum. This oil possesses qualities vitally essential for lubricating and burning, and found in no other oil. It is offered to the public upon the most reliable, thorough, and practical test. Our most skillful engineers and machinists pronounce it superior and cheaper than any other, and the only oil that is in all cases reliable, and will not gum. The "Scientific American," after several tests, pronounced it "superior to any other they have ever used for machinery." For sale only by the inventor and manufacturer, T. S. PEASE, 61 Main st., Buffalo, N. Y.
N. B.—Reliable orders filled for any part of the United States and Europe. 49 2*

**THE GWYNNE PUMP**—References continued from last week:—Messrs. Candee, Dodge, & Co., Contractors, Delaware City, Del.; J. S. Bunce & Co., Engineers and Machinists, 26 Washington st., N. Y. City; J. S. Lovering & Co., Sugar Rofiners, Philadelphia, Pa.; Jacob Moller & Co., Sugar Refiners, Laight street, N. Y.; Theo. P. Howell & Co., Tannery, Newark, N. J.; Geo. Dudley, Esq., Tannery, West Winsted, Ct.; Bodine, Baeder & Co., Glue Manuf., Phila.; Benj. Rodman, Esq., Supply to Shipping, New Bedford, Mass.; John G. Jackson & Co., Marble Quarry, Hockesim Valley, Del., Pelton & Williams, Tannery, Syracuse, N. Y.; C. R. Shelton, Esq., Stone Quarry, New Haven, Ct. 1*

**SEWING MACHINES—CARD TO THE PUBLIC.** The long protracted legal controversy between Elias Howe, Jr., and I. M. Singer & Co., has been amicably settled. Singer's celebrated Sewing Machines, which have had a constantly increasing sale, notwithstanding adverse verdicts and injunctions, may now be purchased and used without any question of the right to use them. We caution the public against buying any of the numerous inferior machines in the market. They all infringe one, and some of them several, of our patents, and those who attempt to use them will be prosecuted. I. M. SINGER & CO., 323 Broadway. 48 3*

**IMPORTANT TO SUGAR PLANTERS AND MANUFACTURERS**—For sale a valuable invention for extracting the juice from the sugar cane. This invention is patented in England, is entirely new and has given complete satisfaction. Apply to J. WARDEN Phenix Foundry, West st., New York. 48 2*

**POWER PLANERS**—Those in want of a small Power Planer, which will plane 3 feet in length, 14 inches wide and 12 inches deep, and made in a superior manner, will please call at the office of the Meriden Machine Co., 15 Gold, cor. Platt st., New York City, or any communication by mail directed to the office or at the factory (West Meriden, Ct.) will meet with prompt attention. 48 3*

**LAWRENCE SCIENTIFIC SCHOOL**—Harvard University.—The next Term of this Institution will open on the 31st day of August, 1854, and continue 20 weeks. Instruction by Recitations, Lectures, and Practical Exercises, according to the nature of the study, will be given in Anatomy by Messrs. Bond, Botany by Prof. Gray; Chemistry, Analytical and Practical, by Prof. Horsford; Comparative Anatomy and Physiology by Prof. Wyman; Engineering by Prof. Eustis; Mathematics by Prof. Pierce; Mineralogy by Prof. Cooke; Physics, by Prof. Lovering; Zoology and Geology by Prof. Agassiz. For further information concerning the School application may be made to Prof. E. N. Horsford, Dean of the Faculty.
Cambridge, Mass., July, 1854. 47 4*

**POLYTECHNIC COLLEGE**—of the State of Pennsylvania, Market Street and West Penn Square, Philadelphia. Lectures will be resumed on Monday, September 11, 1854, under the following Faculty:—Mathematics and Civil Engineering—Prof. Selim H. Peabody. Metallurgy, and Industrial, Analytical and Agricultural Chemistry—Prof. Alfred L. Kennedy, M. D. Mining, Engineering, Geology, and Mineralogy—Prof. W. H. B. Thomas, A. M. Mechanical Philosophy and the Principles of Machinery—Profs. Kennedy and Peabody. Terms for each department for semi-annual session, $15. Mechanical, Architectural, and Topographical Drawing—Prof. John Kern. French and Spanish—Prof. V. de Amarilli. German—Prof. B. H. Entrup.
MATTHEW NEWKIRK, Board of Trustees.
JOHN McINTYRE, Sec'y. 48 2*

**METALLIC OIL**—In most of the Fire Insurance Companies of this city and Philadelphia, parties using Cumberland Brothers' Patent Metallic Oil, can effect insurance on their factories, &c., at the same rate of premium as if they used sperm oil. This privilege is extended to no other oil manufactured for lubricating purposes. For sale in quantities to suit purchasers by YOCKNEY & CO.,
Elizabethport, N. J., office 67 Exchange Place, N.Y. 45 12*

**FOR SALE LOW**—A second-hand six horse Steam Engine and Boiler, with all the fixtures. Address Wm. W. WOODRUFF, New Britain, Ct. 48 4*

**UNIVERSAL SCROLL CHUCKS**—Those in want of a superior article and of various sizes will please call or address at the office of the Meriden Machine Co., 15 Gold st, cor Platt st., New York City. 48 3*

**USEFUL DISCOVERY**—For $1, post-paid, I will send to one address instructions how to draw or mark out a correct scroll of any size and proportions, with the same ease and as quick as a circle can be described with the compasses, and the figure will be more regular and equally correct with the geometrical scroll that requires so much time and scientific knowledge to lay out. A. BELCHAMBERS, Machinist,
48 3* Ripley, Ohio.

**WM. MONTGOMERY & CO.** Machinists, Yonkers, Westchester, Co., New York, manufacture all kinds of Machinery and Machinists' Tools—Bolt Cutters and Drilling Machines of different sizes constantly on hand; Steam Engines from 5 to 100 horse power made to order. Particular attention paid to jobbing in all its branches. Pullies and shafting furnished at short notice. Address as above, 47 3eow*

**PORTABLE STEAM ENGINES**—The subscriber is now prepared to supply excellent Portable Engines, with Boilers, Pumps, Heaters, etc., all complete, and very compact, say 2, 2 1-2, 3, 4, 6, 8, and 10 horse-power, suitable for printers, carpenters, farmers, planters, &c., they can be used with wood, bituminous, or hard coal; a 2 1-2 horse engine can be seen in store, it occupies a space 5 feet by 3 feet, weighs 1500 lbs., price $240; other sizes in proportion. S. C. HILLS.
25eotf Machinery Agent, 12 Platt st, N. Y.

**FAIRMAN & WILLARD'S** BORING MACHINE, for boring car wheels. This is the best machine in use, and warranted to bore thirty wheels in ten hours, and bore them perfectly true. It is equally well fitted for boring Pulleys, Gearing, &c. Price $600, cash.
JAMES W. HOOKER,
43 4eow Buffalo Machinery Depot, 36 Lloyd St., Buffalo.

**FOR RAILROADS AND MACHINE SHOPS.** I am prepared to furnish at the lowest rates, the following Oils: Pure Refined Sperm, Solar, Sperm, and Engine Oil, for locomotives, &c. Refined Elephant Oil, for burning. Lard oil, No. 1, 2, and extra. Lubricating, Whale, and Resin Oil, for heavy machinery.
JAMES W. HOOKER.
43 4eow Buffalo Machinery Depot, 36 Lloyd St., Buffalo.

**MACHINERY.**—S. C. HILLS, No. 12 Platt-st., N. Y. dealer in Steam Engines, Boilers, Iron Planers Lathes, Universal Chucks, Drills; Kase's, Von Schmidt's and other Pumps; Johnson's Shingle Machines; Woodworth's, Daniel's, and Law's Planing Machines; Dick's Presses, Punches, and Shears; Morticing and Tennoning Machines; Belting; Machinery Oil, Beal's Patent Cob and Corn Mills; Burr Mill and Grindstones; Lead and Iron Pipe, &c. Letters, to be noticed, must be post-paid. 27tf eow


UNITED STATES PATENT OFFICE,
Washington, July 21, 1854.

**ON THE PETITION** of Reuben Daniels, of Woodstock, Vt., praying for the extension of a patent granted to him on the 8th day of October, 1840, for an improvement in the "manufacture of cloth of various kinds by the employment of wood and silk, obtained by reducing worn out woolen and silk goods into the fibrous state," for seven years from the expiration of said patent, which takes place on the 8th day of October, 1854.

It is ordered that the said petition be heard at the Patent Office on Monday the 25th of September next, at 12 o'clock. M.; and all persons are notified to appear and show cause, if any they have, why said petition ought not be granted.

Persons opposing the extension are required to file in the Patent Office their objections, specially set forth in writing, at least twenty days before the day of hearing; all testimony filed by either party to be used at the said hearing must be taken and transmitted in accordance with the rules of the office, which will be furnished on application.

The testimony in the case will be closed on the 15th of Sept.: depositions, and other papers relied upon as testimony, must be filed in the office on or before the morning of that day; the arguments, if any, within ten days thereafter.

Ordered, also, that this notice be published in the Union, Intelligencer, and Evening Star, Washington, D. C.; Pennsylvanian, Philadelphia, Pa.; Scientific American, New York, and Post, Boston, Massachusetts, once a week for three successive weeks previous to the 25th day of Sept. next, the day of hearing.
CHARLES MASON,
Commissioner of Patents.

P. S.—Editors of the above papers will please copy and send their bills to the Patent Office, with a paper containing this notice. 47 3

UNITED STATES PATENT OFFICE,
Washington, July 21, 1854.

**ON THE PETITION** of Reuben Daniels, of Woodstock, Vermont, praying for the extension of a patent granted to him on the 10th day of October, 1840, for an improvement in "machine for reducing worn-out cloths and silks of various kinds to the fibrous state, so as to be capable of being manufactured into cloth," for seven years from the expiration of said patent, which takes place on the 10th day of October, 1854:

It is ordered that the said petition be heard at the Patent Office, on Monday, the 25th of September next, at 12 o'clock. M.; and all persons are notified to appear and show cause, if any they have, why said petition ought not to be granted.

Persons opposing the extension are required to file in the Patent Office their objections, specially set forth in writing, at least twenty days before the day of hearing: all testimony filed by either party to be used at the said hearing must be taken and transmitted in accordance with the rules of the office, which will be furnished on application.

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CHARLES MASON,
Commissioner of Patents.

P. S.—Editors of the above papers will please copy, and send their bills to the Patent Office, with a paper containing this notice. 47 3


**IRVING'S PATENT SAFETY CIRCULATING STEAM BOILER**—For Stationary, Locomotive, and Marine Engines. These Boilers having been thoroughly tested by scientific experiment and practical use, are being rapidly introduced into every part of the United States. Their claims to superiority are fully supported by the united testimony of highly respectable parties, who have given them the most successful trials. The following are among the chief advantages of this Boiler: 1st. Great increase of heating surface, with diminution of bulk. 2nd. Economy of fuel—a saving of more than 50 per cent, being effected over other boilers. 3rd. Economy of space, compactness, and strength of form. 4th. Increased safety from explosion. 5th. Freedom from incrustation. Circulars obtained on application at the Company's Office. Boilers of any required power furnished on short notice. Rights negotiated for all parts of the United States, England, France, and Belgium. All communications promptly attended to.
W. F. PHELPS,
45 3m* Sec'y Irving S. Boiler Co., 347 Broadway, N. Y.

**PATENT RIGHT FOR SALE**—State Rights in a new and improved machine, designed for ship and boat spikes, patented July, 4th, 1854. This machine is entirely new, and comprises a new and patented method of pointing, whereby a great amount of labor in repairing is saved. Application should be made to F. HUMPHREY, Boonton, N. J. 47 3*

**BUFFALO MACHINERY DEPOT.** JAMES W HOOKER, 36 Lloyd St., Buffalo, offers for sale all kinds of machinery, as follows: Engine Lathes, Planing Machines, Universal Chucks, Caststeel Borers, Drills, Leather and Rubber Belting, Packing and Hose Oils, Millstones, Portable and Stationary Engines, Boilers, and Machinery generally. 43 tf

**PATENT ROCK DRILL.**—The simplest, cheapest and best ever offered to the public. For information apply to A. B. ELY, Esq., Boston, Mass., agent of North American Rock Drilling Company. 43 3m

**THE EUROPEAN MINING JOURNAL,** Railway and Commercial Gazette. A Weekly Newspaper, forming a Complete History of the Commercial and Scientific Progress of Mines and Railways, and a carefully collated Synopsis, with numerous Illustrations of all New Inventions and Improvements in Mechanics and Civil Engineering. Office, 26 Fleet Street, London. Price $6 1-2 per annum. 43

**T. M. CHAPMAN'S PATENT SAW FILING** Machine. The best known and without a rival. The subscriber offers for sale Territorial Rights, and also builds and sends machines wherever they may be wanted. T. M. CHAPMAN, Patentee, Old Town, Me.
40 10*

**HARRISON'S SUPERIOR GRAIN MILLS**—Latest Patent of June 6, 1854.—The New Haven Mfg Co. having the right for said Mills, will keep a supply constantly on hand. A liberal commission paid to agents for sale of the same. For further information address New Haven Manufg. Co., New Haven Ct. 45tf

**MARYLAND INSTITUTE.**—Baltimore Seventh Annual Exhibition will be opened on the 18th September next, and close on the 16th of October. Circulars with rules and regulations, and any information required, will be promptly furnished by application to John S. Selby, Actuary of the Institute.
45 6* THOS. SWANN, Ch. Ex. Com,

**HARTSON & CO.'S CELEBRATED TURNING** Lathes. Planing and Drilling Machines—Having added extensively to our facilities, we are now prepared to execute orders for the above at short notice; also manufacture to order all tools used by machinists and engine builders. We now have on hand, ready for delivery, the following: Planing Machines, one to plane 25 feet long by 5 feet square; one 20 ft. by 3 ft.; one 18 ft. by 3 ft.; one 16 by 3 ft.; two 8 ft. by 30 in.; two 6 ft. by 25 in.; two 4 ft. by 22 in. Turning Lathes with screw gearing complete: one 22 ft., shears 42 in. swing; one 16 ft. 42 inch swing; two 20 ft. 26 inch. swing; one 13 ft. 26 inch swing; one 18 ft. 22 inch swing: also three vertical suspension drilling machines. The above are all made in the best possible workman-like manner and of the best material. G. B. HARTSON & CO., Globe Works, foot of 33rd street, North River, N. Y. 46 4*

**FOR SALE, LOW,**—The Patent of a Self-Unloading and Adjusting Hay Elevator. Patented May 30th 1854. Address, Horsham, Pa.
43 7* T. T. JARRETT, Patentee.

**STAVE AND BARREL MACHINERY**—HUTCHINSON'S PATENT.—This machinery, which received the highest award at the Crystal Palace, may be seen there in operation during the ensuing season. Cutting, Jointing and Crozing Staves and Turning Heads. Staves prepared by this process are worth to the cooper from 20 to 40 per cent more than when finished in another way. Applicable alike to thick and thin staves. Apply to C. B. HUTCHINSON & CO., Auburn, N. Y., or at the Crystal Palace. 34tf

**KENTUCKY LOCOMOTIVE WORKS**—Corner of Kentucky and Tenth streets, Louisville, Ky.—The proprietors of the Kentucky Locomotive Works would respectfully inform Railroad Companies and the public generally, that, having completed their establishment, they are now prepared to receive and execute orders with fidelity and dispatch. They will contract for Locomotives, Passenger, Baggage, Freight, Gravel, and Hand Cars, of every style and pattern, as well as all kinds of Stock and Machinery required for railroads. Particular attention will be paid to Repairing, for which they have every facility. They are also prepared to contract on favorable terms for building all kinds of Machine Tools, such as Turning Engines, Lathes, Planers, Drills, Slotting, Splining, and Shaping Machines of every variety of pattern. Having also a large Foundry connected with the establishment, orders for castings are solicited, and will be filled with promptness. Car Wheels of any pattern can be furnished on short notice. Double and single plate and Spoke Wheels of all sizes constantly on hand. Communications or orders must be addressed to OLMSTED, TENNEYS, & PECK, Louisville, Ky. 40 6m.*

**PIG IRON**—Scotch and American; also English Boiler Plate and Sheet Iron, for sale at the lowest market prices, by G. O. ROBERTSON, 135 Water st, cor. Pine, N. Y. 40tf

**JOHN PARSHLEY,** No. 5 and 7 Howard st., New Haven, Ct., manufacturer of Machinists' Tools, and Steam Engines, has now finishing off 25 Engine Lathes, 6 feet shears, 4 feet between centers, 15 inches swing, and weighs about 1100 lbs. These Lathes have back and screw gear, jib rest, with screw feed, and the rest is so arranged that the tool can be adjusted to any point the work may require, without unfastening the tool, hence they possess all the good qualities of the jib and the weight lathe; they are of the best workmanship. Price of Lathe with count shaft and pulleys, $155 cash. Cuts, with full description of the lathe, can be had by addressing as above, post-paid. Also four 20 horse power vertical Steam Engines with two cylinders. Price of engine with pump and heater, $800 cash. For particulars address as above. 35tf

**PATENT RIGHT FOR SALE.**—We are ready to dispose of the Patent Right, (or any part of it) of the best Stone Drilling Machine now in use, or we are prepared to furnish working machines at very reasonable prices, these machines will drill from 1 to 7 inches in diameter, and 100 feet deep, and can be worked by Hand, Horse, or Steam Power, one machine performing the work of twenty-five men. For further particulars and circulars with cuts address JAS. T. WHITTEMORE, Agent American Manufacturing Co., 39 State street, Boston, 40 tf

**LEONARD & WILSON**—No. 60 Beaver st, and 109 Pearl st, have constantly on hand and for sale a full assortment of Machinists' and Carpenters' Tools, embracing every variety of Engine and Hand Lathes, Iron Planing Machines, Mortising and Tenoning Machines, Wood Planers, &c. Also, Leather Belting of all sizes made of the best oak tanned butts, stretched on powerful machines, riveted and cemented. 42 13*

**PALMER'S PATENT LEG**—"The best appliance ever invented." Pamphlets containing the testimonials of the first American and European surgeons, and other information concerning this invention sent gratis to all who apply to PALMER & CO., Springfield, Mass.: or 376 Chesnut st, Philadelphia. 42 13*

**NORCROSS' ROTARY PLANING MACHINE.** The Supreme Court of the U. S., at the Term of 1853 and 1854, having decided that the patent granted to Nicholas G. Norcross, of date Feb. 12, 1850, for a Rotary Planing Machine for Planing Boards and Planks, is not an infringement of the Wood Patent.
Rights to use N. G. Norcross's patented machine can be purchased on application to N. G. NORCROSS,
208 Broadway, New York.
The printed Report of the case with the opinion of the Court can be had of Mr. Norcross. 36 6m*

**READING'S PATENT CORN SHELLER** and Cleaner—capacity 200 bushels per hour. 9 first premiums awarded in the Fall of 1853. Patent Rights and Machines now for sale at the corner of 2nd Street and Pennsylvania Avenue, Washington, D. C. I challenge the world to produce its equal. Address personally or by mail. WILLIAM READING. 43 13*

**MACHINISTS TOOLS**—Power Planers 4 to 16 feet long, weight 1,000 to 10,000 lbs. Engine Lathes, 6 to 19 feet long, weight 1,700 to 8,400 lbs., swing 21 to 38 inches. Hand Lathes, Gear Cutters, Drills, Bolt Cutters, Slide Rests, Chucks, &c., of best materials and workmanship constantly on hand, and being built, also the best Grain Mills in the country, "Harrison's Patent." For cuts giving full description and prices address NEW HAVEN MANUFACTURING CO., New Haven, Conn. 38 tf.

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# Scientific Museum.

### New Plastic Compound for Useful and Ornamental Purposes.

The following is the description of an invention, for which patents have recently been obtained in France and England, by Henri J. Scoutetten, of Metz, France, for an account of which we are indebted to "Newton's London Journal." It refers to the manufacture of a paste, composed of vegetable and mineral substances, the number and quantity of which varies according to the purpose for which the paste is required. Thus gutta percha, caoutchouc, pitch, resin, wax, gum-lac, oxyd of iron, golden sulphur of antimony, ultra-marine, chrome, zinc white, &c., may be used.

Manufacture of the paste:—A steam engine serves to furnish steam to two superposed hollow cylinders. These cylinders are themselves moved by the steam, crush the substances which enter into the composition of the paste, and form a homogeneous mass. Double-bottomed cauldrons, equally heated by steam, receive the matter, which, according to circumstances, may be heated dry or in hot water. When the paste is made, it is put into molds and compressed, in order to produce the objects required. These molds are composed of gutta percha containing a twentieth part of caoutchouc; this process of molding affords results hitherto unknown. Each mold should be bound with iron. This paste may also be composed chemically. In this case the gutta percha, caoutchouc, and pitch, are dissolved in the sulphuret of carbon. When the solution is complete and the combination well effected, the solution is purified, the sulphuret of carbon is drawn off, and a mass is obtained, which may be heated dry in close vessels. If it be desired to make pipes, boot soles, straps, &c., add to the above substances, held in solution in the sulphuret of carbon, carded cotton, all the portions of which are penetrated or exactly coated with the material. It is then purified, as in the former case, and a mass is obtained, which is heated dry and passed under rollers. Under other circumstances, and according to known processes, the cotton is replaced by linen, canvas, silk, wool, or any other textile substance. The paste, thus prepared, may be colored by adding one or more of the oxyds indicated. When it is desired to render paper or stuffs impermeable, the caoutchouc and the gutta percha must be separately dissolved in sulphuret of carbon, in the proportion of 8 of gutta percha to 100 of sulphuret of carbon, well purified. The solution is left to rest during eight days, and the white of eggs is added to it. When the impure matters are deposited, it is poured forth to obtain an almost colorless liquid. Paper or stuff may be then steeped in this liquid, and drawn from it by passing the fabric between cleansing rollers, which equalize the layer of the matter. These stuffs become fit for all impermeable clothing. The paper, rendered impermeable, is suitable for photography; it is a substitute for parchment; and it serves for the preservation of valuable papers, to prevent their falsification, erasures, and the action of chemical agents. As to the applications of the paste, they are innumerable; they comprise a complete molding material, either for objects of art or utility; and in many cases may replace leather, pasteboard, plaster, carvings in wood, &c. The objects may be bronzed, gilt, or silvered.

### England's Tribute to American Manufacture of Arms.

A commission of English officers attached to the Engineer and Ordnance Departments are now in this country engaged in examining the system of manufacturing arms pursued in our public and private establishments. By the order of the President and Secretary of War, all the public workshops have been freely thrown open to them, and every facility for examination granted. At Springfield the commission have been delighted at the appearance of the National Armory, and the economy and method of manufacture at this great establishment. A full set of machinery modeled from those now in use there, has been ordered for the English Government, and is now constructing at the Ames Manufacturing Co.'s Works, at Chicopee. Another set is also building at Windsor, Vt., modeled from the machinery of Robbins' Pistol and Carbine Works at that place.

### What our Country Pays for Guano.

The "Genesee Farmer" says:—"The quantity of guano which will be brought to the United States this year will be about 200,000 tuns.

Two hundred thousand tuns of guano purchased at fifty-five dollars a tun, (the present price in New York,) will take out of the country eleven million dollars for imported manure. For a comparatively new country, this is a startling fact. All the corn and corn meal exported in the last fiscal year amounted to less than two and a half million dollars. When will our people see the folly of wasting so much of the elements of crops in all their cities and villages, and in almost every rural district, and then sending to the west coast of South America for ten million dollars' worth of manure?"

## MACHINERY FOR NAPPING CLOTH.

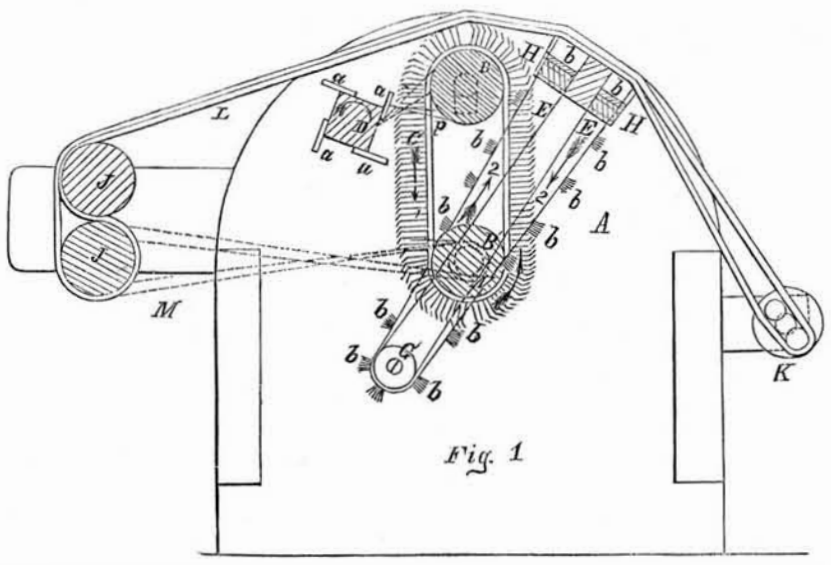


Fig. 1

Figure 1 is a vertical longitudinal section—the plane being through the center of the machine; and fig. 2 a detached view of the transverse belt of a machine for the above-named purpose, for which a patent was granted to Joseph Weight, of Lawrence, Mass., on the 30th of June last. The letters of reference indicate like parts on both figures.

The nature of the improvement consists in the employment of an endless card sheet, in combination with a transverse card belt, constructed, arranged, and operating as follows:

A represents a box or case of suitable form, and having two transverse rollers, B B', placed within it at about its center, the top roller, B, being near the top of the box or case, figure 1. These two rollers, B B', are placed one above the other a suitable distance or space being left between them. The top roller, B, should be so arranged as to be raised or lowered, and

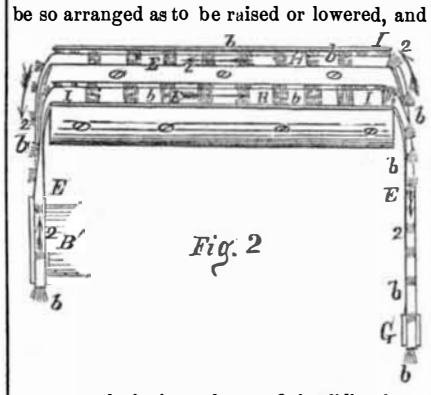


Fig. 2

consequently its journals may fit in sliding bearings. C is an endless card sheet which passes around the two rollers, B B'. The card is constructed in the usual manner and therefore requires no particular description. D is a fly roller having leather strips, *a*, attached to and projecting from it. E, figs. 1 and 2 is an endless belt, having cards, *b*, upon its outer surface. This belt passes around one end of the roller, B', and around a pulley, G, attached to the inner side of the box or case, A, opposite to the end of the roller, B', around which said belt passes. H H are transverse boxes or grooves at the upper part of the box or case, A, in which boxes or grooves the belt, E, fits. At both ends of each box or groove there is a roller, I, over which the belt passes. J J are two rollers placed at one end of the box or case, A, one roller directly over the other, and K is a roller placed at the opposite end of the box or case, fig. 1. L, fig. 1, represents a piece of cloth having its ends secured together and passing around the rollers, J J and K, the piece of cloth bearing upon the upper part of the endless card sheet, C, and endless transverse card belt, E. M is a belt which passes around a pulley, N, at one end of the roller, B', and around a pulley at one end of the roller, I, seen in dotted lines in fig. 1. P is a belt which passes around one end of the upper roller, B, and one end of the fly roller, D.

Operation—Motion is communicated to the roller, B', in any proper manner, and the endless card sheet, C, moves in the direction indicated by the arrows, 1, and the endless transverse card belt, E, moves in the direction indicated by the arrows, 2, while the piece of cloth, L, is moved over the card, C, and endless transverse belt, E, by means of the belt, M, passing uround the pulley at one end of the roller, J, and the pulley, N, at one end of the lower roller, B'. The belt, E, moves in reverse directions across the machine, as denoted by the arrows, 2, and keeps the cloth properly stretched, as regards width, and cards, *b*, on the belt, E, act against the cloth, and with the endless card sheet, C, raise the nap on the cloth. The fly roller, D, as it rotates, cleanses the card sheet, C.

The above machine works practically well, and renders the use of teasels unnecessary. The endless transverse belt, E, not only assists raising the nap, but also keeps the cloth, C, in proper position while passing over the card sheet, thus dispensing with the use of numerous guide rollers.

More information may be obtained by letter addressed to the patentee.

### A Railroad Anecdote.

The following from the Bristol "Times," (England,) is both instructive and amusing:

"We heard an anecdote from a gentleman who recently traveled by train from Bristol to London, which displays the quick witted promptitude of some people. There was in the carriage with him a fellow-passenger, a stranger to him, but who, while looking out of the window soon after the train passed Swindon, had his hat blown off. Without hesitating a moment, or pausing a second in perplexity, he took from the roof-straps over his head a new leather hat-box, and threw it out of the window after the hat. All looked astonished at this appearance of foolish willfulness, and our informant ventured to ask him if he thought it a wise act, because he had lost his hat, to throw away his hat-box also. "Certainly," replied the other, "my hat was a new hat, and if some workman or policeman picks it up, he will either put it on his greasy head or carry it along to the next station in his hand, until, on a wet day like this, it is ruined. Now, when he sees the hat-box near it, he will have sense enough to put it into it, and my name is on the hat-box, so that I can have both sent up to London after me;" and so saying, he deliberately put on his traveling cap, and made himself quite easy on the point. Our informant, on returning to town, was curious enough to enquire at Swindon if these calculations were successful, and learned that it was just as he had anticipated. The hat and band-box were found, and the name being seen, they were forwarded on to London to the owner."

### Plated Ware.

The city of Newark, N. J., is highly distinguished for its intelligent manufacturers and skilful mechanicians. It is the Birmingham of America, so far at least, as the manufacture of jewelry is concerned. Of the many different kinds of goods manufactured there, Messrs. Hattersly & Dickinson have earned a high reputation for beautiful plated ware. In our list of patent claims for July 4, page 350, one is for a design for a tea and coffee pot, granted to this firm. We have just had an opportunity of examining this design, as applied to a tea set of plated ware, and consider that it is one of the most beautiful and elegant we have ever seen. The frosted work is composed of vine leaves, with richly laden clusters of the grape, tastily disposed on every piece of the set, both in wreaths and in single pendant branches.—This firm had a beautiful case of plated ware in the Crystal Palace.

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